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Successful Sexual Aging: A Feminist Gerontological Examination of Sexual Behavior and Health

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SUCCESSFUL SEXUAL AGING: A FEMINIST GERONTOLOGICAL EXAMINATION OF SEXUAL BEHAVIOR AND HEALTH

by

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ABSTRACT

As gerontology has shifted from emphasizing the problems of aging to exploring how older adults can thrive, researchers have increased their attention on new issues including sexuality and aging. A sometimes explicit, but often implicit assumption in this research, is that sex is good for you—that it is an integral part of a full and healthy life or successful aging. Although successful aging is one of the most commonly cited theories in social gerontology (Alley et al. 2010), it has not gone without criticism (Martinson and Berridge 2014). Using an unrefined successful aging framework for sex research has the potential to promote aging and sexuality in narrow ways and privilege certain groups over others. This research examines the relationship between sexual activity and health from a feminist gerontological perspective. In

particular, I explore differences in what counts as sex and how gender and social location influence the relationship between health and sexual activity. Using a nationally representative sample of community dwelling older adults (3005) from the first wave of the National Social Life, Health, and Aging Project, I find that older adults engage in a wide variety of sexual activity which differs by social location (e.g. gender, race, and class). Furthermore, gender differences in sexual behavior are not merely due to a lack of access to healthy partners for women. Much of the gender gap in sexual behavior can be explained by disparities in sexual interest and desire. In addition, using more inclusive definitions of sex, partnered sexual behavior is associated with health even after accounting for demographics and relationship factors. In conclusion, existing models of aging and sexuality, relying on successful aging or a correlation between continued sexual activity and health, may limit our understanding of the experiences of women and sexual minorities. A feminist gerontological approach provides a more nuanced understanding of the relationship between health and continued sexual activity.

INDEX WORDS: Sexuality, Aging, Feminist Gerontology, Successful Aging, NSHAP

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DEDICATION

To Chuck, Raven, & Maya.

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1 INTRODUCTION

Last February, 116 year old Emma Morano, currently the oldest woman in the world, was featured in the New York Times. She attributed her long healthy life to raw eggs and staying away from men. She had been in an unhappy marriage when she was in her 30s and never married again because she "didn't want to be dominated by anyone" (Povoledo 2015). Her experiences contradict findings from recent academic research showing that health is correlated with a long sex life through older ages (DeLamater 2012). A sometimes explicit, but often implicit, assumption of this research is that sex is good for you—that it is an integral part of successful aging and engagement in a long, full, and healthy life (Katz and Marshall 2003, Katz and Marshall 2004, Marshall 2012). This assumption aligns with a shift in gerontological research from focusing on the problems with aging to more recent research using a positive health framework (Hinterlong, Morrow-Howell and Sherraden 2001).

Successful aging, the dominant positive health paradigm, has contributed greatly to social gerontology, inspiring decades of interdisciplinary research focusing on how to maintain health and quality of life (Alley et al. 2010, Phelan and Larson 2002). Although it is one of the most commonly used models in gerontology (Alley et al. 2010), it has not gone without criticism (Martinson and Berridge 2014). When we fail to address the criticism and limitations of our models, those limitations become embedded in the results of research. Although successful aging does not specifically address sex, much of the research in the area of sex and aging are implicitly or explicitly coming from a successful aging perspective (Katz and Marshall 2003, Marshall 2006). The unexamined use of this successful aging framework applied to sex and aging research has the potential to promote aging and sexuality in narrow ways that privilege certain groups (Katz and Marshall 2003, Marshall 2006). In this research, I reframe the relationship between

sexual activity and health from a feminist gerontological perspective by asking who is privileged by a using a successful aging framework, and what factors specific to the experiences of women impact the relationship between health and sexual behavior. This can illuminate the many varied meanings people have regarding sex and relationships, the many varied ways people have sex at older ages, the relationship between sex and health and longevity, and the utility of a successful aging framework on sex and aging. Furthermore, this may help to us to understand why contrary to the research, supercentenarian Emma Moreno has lived so long without a romantic relationship.

Chapter two provides an overview of the literature and the theoretical argument. I discuss the predominant theoretical framework used to study aging and sex, its limitations, and contrast it with a feminist gerontological approach. In chapter three, the methods section, I review the National Social Life, Health and Aging Project dataset, the sampling procedures, the measurements used, and the data analysis. In chapter four, I discuss the predominant patterns of sex in which older adults engage and their relationship to social position, health, and relationship characteristics. In chapter five, I examine the relationship between health, patterns of sex, and demographics. In chapter six, I examine the relationship between health, patterns of sex and relationship factors. Finally, in chapter seven, I discuss the results, implications, limitations, and future research.

2 THEORETICAL BACKGROUND AND LITERATURE REVIEW

2.1 Aging and Sex

Contrary to stereotypes, many older adults engage in a wide variety of sexual behavior. Although more recent images—usually employed in the selling of products—portray older adults as active, financially well-off, usually white, well-traveled, and sexually active (Gilleard and

Higgs 2000), stereotypes of frail, financially and physically dependent, asexual, and sexually undesirable older adults persist (Walz 2002). In reality, there is a lot variation in the sexual behavior of older adults (Lindau et al. 2007). Although frequency of sexual activity declines to some extent with chronological aging, especially for those over the age of 85 (Lindau and Gavrilova, 2010), over half of people aged 57-85 and approximately a third of those aged 75-85 remain sexually active (Lindau and Gavrilova 2010). The majority of older adults remain interested in sex and engage in regular sexual activity that includes a wide variety of sex acts (Lindau et al. 2007, Syme et al. 2012).

A decline in the frequency of sexual activity and interest in sex is not solely influenced by chronological aging but is also very dependent on one's social circumstances (Karraker and DeLamater 2013, Lindau et al. 2007). For instance, a life course perspective on aging and sexuality suggests that there is continuity between sexual desire and activity between earlier and later life (Burgess 2004, Carpenter 2010). Additionally, other predictors of a decrease in sexual activity include a lack of available partners (Ginsberg, Pomerantz and Kramer-Feeley 2005, Gott and Hinchliff 2003, Lindau et al. 2007), health status (Karraker and DeLamater 2013, Laumann and Waite 2008, Lindau and Gavrilova 2010, Syme et al. 2012), and the age and health status of one's partner (Gott and Hinchliff 2003, Karraker and DeLamater 2013, Lindau et al. 2007, Lodge and Umberson 2012, Syme et al. 2012).

There are gender differences in the frequency of sexual activity, interest in sex, and satisfaction with sex at older ages (Lindau et al. 2007, Lindau and Gavrilova 2010, Syme et al. 2012). Men are more likely to maintain an interest in sex and continue sexual activity at older ages (Lindau and Gavrilova 2010). A decline in physical health is a stronger predictor for decreased sexual activity in women than for men (Karraker and DeLamater 2013). Additionally,

women tend to live longer with more years of chronic disease and disability (Austad 2006). Mental health problems are also more likely to be associated with decreased interest and satisfaction in women than they are in men (DeLamater 2012). Among those that continue to engage in sex at older ages, women are more likely to be sexually dissatisfied than are men (Laumann and Waite 2008, Lindau et al. 2007, Syme et al. 2012).

Older men also have greater access to partners than women. Most sexual behavior happens in the context of an exclusive romantic relationship, with marriage being the most common form (Karraker, DeLamater and Schwartz 2011, Lindau and Gavrilova 2010). Men are more likely to be married and report greater marital satisfaction than women (Karraker and DeLamater 2013). Because older men tend to form partnerships with younger women, have a lower life expectancy than women, and are more likely to remarry after divorce or widowhood (Karraker and DeLamater 2013), older men are more likely to have a sexual partner than older women (Carpenter, Nathanson and Kim 2006) and older women are more likely to be in a sexually inactive relationship than are older men (Karraker and DeLamater 2013). Regardless of attitudes about sexuality outside of marriage, older men are more likely to have multiple partners where women are more likely to have no partners (Carpenter, Nathanson and Kim 2006).

Differences in access to partners may in part be due to cohort differences in attitudes, behaviors, and norms surrounding sex, dating, and relationships (Burgess 2004, DeLamater and Moorman 2007). Attitudes about sex and sex outside of marriage have shifted dramatically since World War II (Burgess 2004). Older cohorts are more likely than younger cohorts to believe that one is not supposed to have sex outside of marriage (DeLamater and Moorman 2007). Therefore, after death or divorce, they are less likely to seek a sexual partner outside of marriage (DeLamater and Moorman 2007). There are also differences within cohorts, by gender and race

(Carpenter, Nathanson and Kim 2006). Although older cohorts are more likely to hold less permissive attitudes about sex outside of marriage, older women, especially African American women, are more likely to act on those beliefs than older men (Carpenter, Nathanson and Kim 2006).

There is a need for more intersectional research on sexuality and aging (Carpenter 2010, DeLamater 2012). Research on differences in sexual behavior in regards to sex by race and ethnicity largely concentrate on adolescent behavior (Mahay, Laumann and Michaels 2001). However, much of this research shows that African-Americans, Hispanics, and whites are strikingly similar in attitudes toward age of sexual debut and premarital sex (Mahay, Laumann and Michaels 2001). In general, African Americans tend to have less conservative views toward sexuality than whites (Laumann 1994) although this may differ significantly by gender with African American women holding more conservative views than whites (Mahay, Laumann and Michaels 2001). Hispanics also tend to have more conservative views than whites (Laumann 1994). However this may have little impact on their behavior (Mahay, Laumann and Michaels 2001). There are also very modest differences in partnered sexual activity by race (Laumann 1994). There is very little research that focuses on racial differences in sexual behavior among married people (Karraker and DeLamater 2013).

Sex is associated with better health and well-being regardless of race or gender (Lindau et al. 2007). However, just because they are associated, does not mean that we know the causal order of the association. Sex may be good for your health or good health may be necessary to engage in sex. It is difficult to establish causal order because of the lack of longitudinal data (Karraker and DeLamater 2013). There is overwhelming evidence that declining health, both mental and physical, negatively impact sexual activity and the ability to age successfully

(Ganong and Larson 2011, Karraker and DeLamater 2013, Syme et al. 2012). Self-rated physical health is more strongly associated sexual problems than chronological age (Lindau et al. 2007). Moreover, there are many conditions as well as medications that are known to impact sexual function (DeLamater and Karraker 2009), However, research from disability scholars show that it is a myth that people with both physical and cognitive disabilities are unable to have good sex and are more inhibited by the stereotype of asexuality than physical or cognitive impairment (Milligan and Neufeldt 2001). This suggests that the influence of functional status on sexual activity may be more social than physical.

Although there is some evidence that good health is necessary to engage in sex, there is less evidence that sex is important for good health (DeLamater 2012). The indirect evidence, that social support and relationship quality impact health outcomes, suggest that sexual activity may positively impact health (Umberson et al. 2006). Although there is not a lot of direct evidence that sexual activity is important for maintaining health, and that it is a stereotype that people with disabilities are unable to engage in sexual activity, many studies use this correlation between sexual activity and successful aging as an impetus for further study (Karraker, DeLamater and Schwartz 2011, Syme et al. 2012, Wiley and Bortz 1996) framing sexual activity as a necessary component of successful aging (Hinchliff and Gott 2011).

Because the majority of sexually active older adults are in a relationship, many of the benefits of sex may be due to not to the act of sex but because of the social support that a relationship provides. Social integration and social support are important for health outcomes and longevity (House, Landis and Umberson 1988, Umberson and Montez 2010). Conversely, loneliness is detrimental to health (Luo et al. 2012). Being married may be good for one's health because spouses may encourage positive health behaviors or monitor health (Umberson, Crosnoe

and Reczek 2010, Waite 1995). The social support provided by a romantic relationship may also benefit health by reducing the effects of stress (Thoits 1995). However, the relationship between health and marriage is complicated by the fact that the benefit of social support depends on relationship quality (Umberson et al. 2006). Marital strain may be worse for one's health than being single and this may be compounded with age (Umberson et al. 2006). It may not be necessary, feasible or desirable for many older adults to maintain sexual activity as a component of successful aging.

2.2 Successful Aging

Successful aging, a theoretical framework advanced by Rowe and Khan, distinguishes between usual aging and successful aging (Rowe and Kahn 1987). Where usual aging includes physical and cognitive decline or at least the risk factors for physical and cognitive decline, successful aging, in contrast, means thriving—healthy and active participation in life (Rowe and Kahn 1987, Rowe and Kahn 1997). It is aging with the minimum of risk factors for physical and cognitive decline (Rowe and Kahn 1998, Rowe and Kahn 1997). The theory is comprised of three components that include the absence of disease or risk factors for disease, maintenance of physical and cognitive functioning, and active engagement with life (Rowe and Kahn 1998, Rowe and Kahn 1997). The predominant focus is on a lifetime of prevention of disease in order to maintain an active and engaged later life (Rowe and Kahn 1998, Rowe and Kahn 1997, Strawbridge, Wallhagen and Cohen 2002).

Successful aging, part of a broader movement toward positive health and aging, evolved out of research on productive aging, which began as an interdisciplinary endeavor between researchers, activists, and policy-makers, and ultimately changed the direction of gerontological research (Dillaway and Byrnes 2009, Hinterlong, Morrow-Howell and Sherraden 2001).

Advocates sought to show that older adults were productive contributing members of society and were engaged in a variety of productive activities, such as caretaking and volunteering, which were useful to society even if they were not activities valued by the labor market (Hinterlong, Morrow-Howell and Sherraden 2001). Earlier theories had focused on the dependency and disengagement of older adults and previous research was focused on the problems of aging--dealing with the frail and diseased elderly—while overlooking thriving older adults (Estes 2001, Hinterlong, Morrow-Howell and Sherraden 2001). Although these approaches often extend beyond the original intent of successful aging as proposed by Rowe and Khan (1998), successful aging is now ubiquitous in gerontology, driving social, psychological, and medical research and interventions (Dillaway and Byrnes 2009).

Major contributions of successful aging have included combatting ageism, stereotypes of frailty and dependence, and encouraging healthy aging. However, there are many criticisms of successful aging that do not always get addressed in research using a successful aging perspective (Dillaway and Byrnes 2009, Martinson and Berridge 2014). First, some question whether or not it is even possible to age without any physical or cognitive decline, especially for the oldest old (McLaughlin et al. 2010). Some level of decline might be a natural part of aging and portraying aging otherwise may inadvertently increase the stigma and ageism experienced by older adults who do experience physical or cognitive decline (Holstein 2006). Furthermore, among older adults who do experience physical or cognitive decline, it does not necessarily prevent an active engagement with life (Minkler and Fadem 2002).

Second, successful aging focuses primarily on individual behavior (Estes 2001, Katz and Marshall 2004). Some of the earliest criticism of successful aging was that it ignored the environment and social structure and did integrate a life course perspective (Riley 1998). Aging

occurs within a social context (Shanahan and Macmillan 2007). Healthy aging is not completely dependent on individual healthy behaviors, but the interdependent relationship between individual behaviors and structural opportunities, and how they both change over time (Estes 2001). Focusing on individual behavior promotes a narrow vision of aging that does not take into account different life course experiences and also promotes healthy lifestyle behaviors as a personal responsibility (Angus and Reeve 2006, Dillaway and Byrnes 2009).

Third, and not unrelated, is that successful aging may represent the aging of privileged groups and has been criticized for a lack of attention to people's multiple social locations as well as disadvantage (Angus and Reeve 2006, Crosnoe and Elder 2002, Dillaway and Byrnes 2009, Holstein and Minkler 2003). This promotes a narrow view of aging that is based on the behaviors of privileged groups. It may also put forth the idea that there is a superior way to age that we should all be striving toward (Katz and Marshall 2004).

The study of sexuality and aging has followed similar trajectory as successful aging (Katz and Marshall 2003). Older theories focused on decline and loss that required adjustment and adaptation to a decreased sex drive (Marshall 2006). Throughout much of history, it was considered natural for old people to gradually stop having sex. This was thought to free them from anxiety and distraction so that they could then focus their endeavors on more lofty pursuits (Marshall 2006). Because of anti-ageism research, we now know that sexual decline is not necessarily inevitable. Many older adults have active and fulfilling sex lives (Lindau et al. 2007). More recent research on sexuality and aging has been important in combatting the ageist idea that older adults are asexual and has illustrated that many older adults can maintain an active sex life (Lindau et al. 2007). However, much of this research uses a successful aging frame,

explicitly or implicitly, linking sex to health and longevity (Katz and Marshall 2003, Katz and Marshall 2004, Marshall 2012).

Rowe and Khan (1997) never addressed sexual behavior. They posited that certain behaviors, such as exercise, were good for health and would encourage aging with minimal disease and disability. Although they never specified explicit behavior or exercise for successful aging, their model has spawned a wide variety of research investigating factors that would encourage successful aging including social support and the maintenance of interpersonal relationships (Dillaway and Byrnes 2007). Subsequently, sex and aging researchers have argued that sex should be considered a component of successful aging (Syme et al. 2012). A successful aging perspective frames most current research on aging and sex which commonly emphasizes the relationship between continued sexual activity and health (Karraker 2011, Lindau et al. 2007, Syme et al. 2012, Wiley and Bortz 1996). Successful aging is not necessarily being tested, or even being used to guide the research, but most often being discussed in the literature review. For example, one of the seminal articles on sex and aging was titled "Sexuality and Aging — Usual and Successful (Wiley and Bortz 1996)." Wiley and Bortz conduct a descriptive analysis to find out the types of behaviors in which older adults engaged, how they felt about it, and whether anything could be done to improve it. They did not operationalize successful aging or address whether or not continued sexual activity would prevent disease and disability, but focused on the relationship between health, quality of life, and continued sexual activity. Although this research did show that many older adults continued to engage in sexual behavior, it did not further delineate what was usual or successful. Another important article, "A Study of Sexuality and Health among Older Adults in the United States" (Lindau et al. 2007) was also descriptive but one of the first using a nationally representative sample. Published in The New

England Journal of Medicine, this atheoretical article focused on sexual problems of older adults and the relationship to health. More recent research investigating how changes in population composition impact the frequency of partnered heterosexual sex, also did not explicitly use theory or test any constructs in the successful aging model, yet in the literature review stated, "The relationship between sexual activity and aging has been studied extensively and is important for identifying pathways for successful aging as well as for vulnerability to illness" (Karraker et al. 2011). Similarly, Syme et al. (2012) state in their literature review that "Sexual well-being is an often-neglected dimension that may contribute directly and indirectly (via physical and emotional health) to successful aging." These implicit references to successful aging are becoming more common in research on sexuality and aging and have the potential to shape the direction of future research.

Although a successful aging framework has not garnered the same level of criticism within the sex and aging literature as other literature, it can be evaluated in a similar fashion. If we do not address the criticisms of our models, we replicate the underlying assumptions and flaws. For these reasons, it is important to further interrogate the relationship between sexual activity and health. In this research, I reframe the way that we think, talk about, and study the relationship between aging and sex and ultimately health and sex. A feminist gerontological perspective can broaden the discussion and address some of the criticism of an uncritical application of successful aging.

2.3 Feminist Gerontology

Feminist gerontology is part of a broader framework of critical gerontology (Ray 1996) that explicates power structures and power relations on both a micro and macro level (Moody 1992, Ray 1996). It provides a lens for analyzing power relationships in both everyday

interactions as well as in the politics of research (Ray 1996). It challenges knowledge production by providing a framework to question who is creating gerontological knowledge and who benefits from this knowledge (Moody 1992, Ray 1996). Rather than being a theory with testable constructs, it is a lens with which to frame research (Ray 1996).

Gerontology has historically been dominated by a biomedical perspective (Estes and Binney 1989), and social gerontology often ignores the unique experiences of women and the gendered nature of power structures and relationships that impact how both women and men age (Calasanti and Slevin 2001). Simultaneously, academic feminism has often ignored aging (Krekula 2007). Gender is a fundamental organizing principle of society (Estes 2001). It is a determining factor in all social roles from the one's relationship to the labor force to roles within relationships (Calasanti 2004, Estes 2001). Women's health and well-being in later life is often tied to marriage and a husband's work history (Estes 2001). Because gender is fundamental to social structure, feminist gerontology situates gender as central to the study of aging as well as the growth of gerontology (Bengtson, Burgess and Parrott 1997, Ray 1996).

Feminist gerontology comes from the standpoint that gender and age are not necessarily biological fixed constructs but socially constructed and entrenched within social structure (Bengtson, Burgess and Parrott 1997, Calasanti and Slevin 2001, Ray 1996). Both gender and age influence work, intimate relationships, retirement and create restrictive roles and stereotypes (Hooyman et al. 2002, Ray 1996). Although feminist gerontology pays particular attention to the lived experiences of women as subjects rather than objects of research, it does not focus solely on women but on power relationships based on gender (Calasanti 2004).

Feminist gerontology proposes that gender is relational (Calasanti and Slevin 2001, Calasanti 2004, Hooyman et al. 2002). It looks at how categories of men and women are

mutually constructed through power relationships (Calasanti 2004, Hooyman et al. 2002). Gender relations shape individual interactions and relationships as well as social institutions (Calasanti 2004). These categories of both gender and age constrain relationships and choices, and influence social structure. At the same time, structure based on gender constrains and limits the choices, and shapes the roles and responsibilities of both women and men in different ways which often privilege men (Calasanti 2004).

Feminist gerontology is intersectional (Hooyman et al. 2002). It advocates for examining power relationships in order to make them visible to those that are advantaged by them and to call into question the naturalness of the status quo (Calasanti 2004, Hooyman et al. 2002). People age within a social structure shaped not only by gender and age, but also by race, class, sexual orientation, and ability (Calasanti and Slevin 2001). Each of these social categories, intersectionalities, and axes of identity impact the experiences of how we age, shape our identities, and structure our lives, experiences, and access to resources throughout the life course (Collins 2004, Estes 2001, Hooyman et al. 2002).

2.4 A Feminist Gerontological Perspective on Sex and Aging

In contrast to a successful aging approach to sexuality and health, the feminist gerontological perspective takes into account social context and problematizes gendered power structures and opportunities. To date, most research in this area has studied the frequency of penile-vaginal penetration (PVI) (Burgess 2004, DeLamater 2012). In the absence of explicit theory, this research assumes that PVI should be an important part of older adults' lives—or that frequent PVI will somehow decrease morbidity and mortality. These narrow definitions of sex reinforce heteronormative assumptions of older adults and ignore the experiences of sexual minorities who may not have or desire vaginal penetration (DeLamater 2012). Additionally,

framing sex as a necessary component of successful aging or necessary for heal promotes the idea, not that aging includes sex, but that aging should include sex, thus erasing the heterogeneity of individual desires of older adults and their social contexts by promoting a narrow vision of both aging and sex. Furthermore it is an androcentric definition of sex that prioritizes male pleasure (Maines 1999).

Similar to the life course critique of successful aging theory, a feminist gerontological approach to sex and aging highlights the social contexts of people's lives emphasizing the role gender, race, class, and age play in shaping opportunities for health and relationships. Thus, a feminist gerontological approach acknowledges that lifelong sex may not benefit health for all groups equally. As stated above, interest and frequency of sex at older ages differs by gender. Older women have less sex and interest in sex than older men (Lindau et al. 2007), they have a shorter sexual lifespan than men (Lindau and Gavrilova 2010), and, on average, they have less access to healthy partners (Karraker and DeLamater 2013). Currently this decreased desire for sex among women is considered a dysfunction (Tiefer 2004). Much of the research--coming from the perspective that sex is good and healthy--assumes that older women are disadvantaged and that this is the result of the intersection between sexism and ageism (Carpenter, Nathanson and Kim 2006). From this perspective, it would be better for women's health to find ways to alleviate the problems of sexism and ageism in order for older women to have long and healthy sex lives.

Although this may be useful and important for many women, these ideas do not leave room for the possibility that many older women may actively be choosing to abstain from sex. Assuming disadvantage and misfortune aids in constructing a stereotype of older women as helpless victims, which may ultimately reinforce an ageist and sexist ideology (Krekula 2007).

Feminist gerontology shows us that we need to really look at differences by gender and structural power relationships (Calasanti 2004). Rather than pining away for an intimate relationship that is unavailable to them, women may actively be choosing to refrain from engaging in sexual activity--and not merely because of physical dysfunction. Observational studies on women's desire often overlook the relationship between housework, care-work, and sex. Elliot and Umberson (2008) found that women were less likely to want sex because they were tired and stressed out from a second and third shift of household labor and care-work. Research on widowhood and late life partnership shows that many older women choose not to repartner because they value their newfound freedom and independence (Davidson 2001). For many older women today, relationships mean compromise, caretaking, and housekeeping while remaining single means independence (Davidson 2001). Additionally, the desire to repartner later in life might have more to do with social support than intimacy and sex. Women tend to have higher levels of social support and men who have the same levels of social support as women tend to repartner at the same rate as women (Carr 2004). Thus, women may not simply be disadvantaged in terms of finding available partners, but instead a making a conscious choice. Older women may be not actively seeking sex partners or not be interested in sex. For many older women, a sexual and intimate relationship means a loss of independence (Davidson 2001). The prevailing view is that women adjust to adjust to limited opportunities by decreasing their desire as a coping mechanism to prevent the ensuing depression caused by not being able to have sex (DeLamater and Moorman 2007). This does not leave room for the possibility that the empowerment that comes with choosing to remain single and independent confers a health benefit that would be lost in order to maintain a long sex life. This may be especially true for a cohort of older adults who have spent more of their lives in subordinate positions in both families and the workplace. Even

if the majority of older women wanted to be in a sexual relationship, it is numerically impossible because there are significantly fewer men at older ages. By emphasizing this as a goal for a successful healthy life, it is setting up a large proportion of women for failure--particularly the oldest-old women.

Finally, a successful aging framework applied to the sexual behavior of older adults may speak primarily to the aging of privileged groups. The research on sexuality and aging that measures frequency of vaginal penetration privileges quantity over quality (DeLamater and Karraker 2009), which may place an emphasis on male pleasure and orgasm (Burgess 2004). This narrow definition of sex has the potential to promote sexist and heterosexist ideas of aging and sexuality (Karraker and DeLamater 2013). And while it may privilege male desire, promoting quantity of vaginal penetration may have a negative impact on men as well. Men who adapt to their changing aging bodies and are not as focused on erections tend to have more satisfying sex lives as they age (Burgess 2004).

The research that constructs the idea that sexual activity is an integral part of successful aging is sometimes explicit (Syme et al. 2012, Wiley and Bortz 1996) but often implicit (Lindau et al. 2007, Lindau and Gavrilova 2010). These studies rarely operationalize successful aging. Some test the relationship between continued sexual activity or a lack of sexual activity on objective measures of health or self-rated health. Others use the relationship, which may or may not be causal, between sexual activity and self-rated health (Karraker, DeLamater and Schwartz 2011, Karraker and DeLamater 2013) in order to justify other tangentially related research questions. This aids in the construction of the notion that successful sexual aging is an integral part of successful aging (Katz 2013, Katz and Marshall 2003). For these reasons, it is important

to further test the relationship between health and sexual activity from a feminist gerontological perspective.

I propose a reframing of the way that we think, talk about, and research the relationship between health and sex. Sex may be important for health and longevity, but it may be contingent on circumstances, and there may be consequences to promoting a prescriptive type or amount of sex. A feminist gerontological perspective broadens our definition of sex, going beyond individual factors to explore the complex factors influence the relationship between sexual activity and health. In this dissertation, I started with a descriptive analysis that looks at the types of sex older adults are having and shows who is privileged by an uncritical use of the successful aging assumptions applied to the study of sex at older ages. I then compared the model that comes from a successful aging framework that tests the relationship between self-rated health and continued sexual frequency with a model using a feminist gerontological framework that looks at self-rated health and variables specific to the experiences of women.

2.5 Research Questions

1. What types of sexual activity, in addition to penile-vaginal intercourse, characterize the sexual activity of older adults and how does type, and perceived quality of such activities vary across social groups (i.e. gender, age, functional status, relationship status, and self-rated health)?
    a. Given typical definitions of successful aging related to sexual activity, which social groups are classified as "successfully aging?" What does this tell us about the application of successful aging to the sexual activity of older adults?
2. What demographic, socioeconomic, relationship and sexual activity variables impact older adults' self-rated health?

   a. If sex is considered a component of successful aging, and measured using frequency of PVI, who is considered unable to age successfully, and what is their health status?

3. Do relationship status, relationship quality, social support, interest in sex, and caregiving account for the relationship between sexual activity and health and for whom?
   a. Do older adults who have low levels of desire and interest and choose not to maintain sexual activity have higher self-rated health than those who have low levels of desire and interest and maintain sexual activity?

3 METHODS

3.1 Data

In order to investigate the relationship between sexual activity and self-rated health, I use data from the National Social Life, Health, and Aging Project (NSHAP). NSHAP was designed to investigate the relationship between social support, social relationships, sexuality, and healthy aging (Suzman 2009). The overarching goal of NSHAP is to study the relationship between health and sexuality of older Americans (O'Muircheartaigh, Eckman and Smith 2009). It is rare and innovative in that it is one of the only nationally representative studies purposefully designed to study sexuality in older adults (Suzman 2009).

The NSHAP data are comprised of a nationally representative sample of community dwelling adults aged 57 to 85 (Suzman 2009). It employed a multistage area probability design in which the households selected into the study for screening were chosen from two levels of geographic areas with probabilities proportional to their sizes (O'Muircheartaigh, Eckman and Smith 2009). Blacks, Hispanics, men, and those aged 75-85 were oversampled (O'Muircheartaigh, Eckman and Smith 2009). Because this was a household study that recruited

from younger households in conjunction with the Health and Retirement Study, those estimated to be excluded from the sample were people living in households with adult children, younger partners or roommates, and people who were living outside of the U.S. during sample selection (O'Muircheartaigh, Eckman and Smith 2009). However, the undercoverage was small at an estimated 5%. The final sample was 3,005 adults (1,550 women and 1,455 men) and the overall response rate was 75.5% (O'Muircheartaigh, Eckman and Smith 2009).

NSHAP was designed as a longitudinal study. However, the data in this analysis will be cross-sectional and focus on the first wave of data collection. The data was collected in 2005 and 2006. The data collection occurred in the respondent's homes and included a face-to-face interview, an in-home anthropometric measurements collection, and a leave-behind questionnaire. The data include demographics, information on social and intimate relationships and relationship history, and information on both physical and mental health. The interviews were conducted by professional interviewers in both Spanish and English.

3.2 Data Analysis

For each of the research questions below I discuss the analytic strategy, describe the variables, and discuss how each variable is operationalized. I use the full sample of both partnered and single older adults because the impact of sex on health outcomes may be different depending on partnership status. In order to analyze the data, I use IBM SPSS Statistics 21.

Missing data has the potential to bias results as well as reducing the sample size which in turn reduces statistical power (Allison 2002). A common and simple way to deal with missing data is listwise or case wise deletion, but that can only be used if there the amount of missing data is very small and the missing data is missing at random (Allison 2002). Because this is a sensitive topic, data are unlikely to be missing at random. Because of this, I used multiple

imputation (Allison 2002). Finally, all procedures were reviewed and approved by the Institutional Review Board at Georgia State University.

3.2.1 Research Question One

Most research defines sex as PVI, even in research such as NSHAP, which defines sex however the respondent wants to define it, may still be limited by that definition if the respondents defines sex as PVI. Measuring frequency of PVI and even frequency of self-defined sexual activity may promote a narrow idea of sexuality and aging. It is important to know the wide variety of sex acts of sex acts older adults are engaging in and their relationships with health.

I started by investigating the types of sexual acts that characterize the sexual activity of older adults and how type, and perceived quality vary across social groups. I conducted a univariate analysis and then bivariate analyses with chi-square tests and one-way ANOVAs depending on level of measurement. Finally, I use a multinomial logistic regression to understand how different social groups are sorted into sexual activities based on the independent variables listed above. Multinomial logistic regression is used to assess the relationship between more than one non-ordered categorical outcome variable and several independent variables. The dependent variables are the different types of sex acts in which older adults engage. The independent variables are demographic variables such as age, gender, race and ethnicity, and educational attainment, as well as functional status, health and health of one's partner, relationship status, relationship quality, interest in sex, and satisfaction with frequency of sex. See table 1 for a detailed list of variables and how they are operationalized in NSHAP.

I will first determine the most prevalent mutually exclusive combinations of sex acts for the multinomial regression. See sections 3.2.4 for specific information on how this variable was constructed empirically from the data on sex acts.

Hypotheses related to research question one are as follows:

H1: There will be demographic differences in sexual behaviors.

H2: Demographic variables, functional status, health and sexual health of one's partner, relationship status, relationship quality, interest in sex, and satisfaction with frequency of sex will be predictive of engaging in certain types of sex acts.

3.2.2 Research Question Two

In order to investigate the relative impact of demographic, socioeconomic, relationship and sexual activity variables on the self-rated health of older adults, I estimated a series of ordered logit regression models. Ordered logit regression is used to estimate the impact of independent variables on ordered categorical dependent variables. Self-rated health, which has ordered response categories such as excellent, very good, good, fair, and poor, is the dependent variable for this research question. Independent variables are the frequency of different sex acts, education, age, gender, race and ethnicity. This will show the relative impact of the predominant types of sex acts on health before and after controlling for social demographic variables. See table 1 for a detailed list of variables and how they are operationalized in NSHAP.

H3: Engaging in sex acts will be predictive of greater self-rated health. The strength of these relationships will be different across sex act categories.

H4: When controlling for demographic, socioeconomic status and relationship variables, relationship between sex act categories and self-rated health will be diminished in strength and/or significance.

3.2.3 Research Question Three

In order to further specify the relationship between specific sex acts and health, I will estimate models that included relationship status, relationship quality, social support, interest in sex, satisfaction with amount of sex, and caregiving and assess whether these additional variables account for or further specify the relationship between sexual activity and health. I estimate a series of ordered logit regressions with self-rated health as the dependent variable. Independent variables will be relationship status, relationship quality, social support, interest in sex, satisfaction with the frequency of sex, health of one's partner, and caregiving. See table 1 for a detailed list of variables and how they are operationalized in NSHAP.

H5: Relationship status, relationship quality, social support, interest in sex, satisfaction with the frequency of sex, health of one's partner, and caregiving will impact the strength or significance of the relationship between sex act categories and self-rated health.

H6: Those who have low levels of desire and interest and choose not to maintain sexual activity will have higher self-rated health than those who have low levels of desire and interest and maintain sexual activity.

3.3 Measures

3.3.1 Dependent Variables

Sexual behaviors. For this variable, I measured the different types of sexual behaviors of older adults. The final sexual behaviors are categorized as no sex, masturbation only, sex that includes PVI and sex that does not include PVI. To determine these categories, I created an exhaustive list of mutually exclusive combinations of sex acts in which the respondents engaged. The categories were as follows: no Sex; PVI only; hugging, kissing, and touching only (intimate contact); PVI and intimate contact; masturbation only; masturbation and PVI; masturbation and

intimate contact; masturbation, intimate contact, and PVI; oral sex and PVI; oral sex and intimate contact; oral sex, intimate contact, and PVI; oral sex and masturbation; oral sex, masturbation, and PVI; oral sex, masturbation, and intimate contact; oral sex, intimate contact, masturbation, and PVI. All permutations that include PVI were categorized as sex with PVI and all that did not include PVI were categorized as sex without PVI. The category no sex was not engaging in any sexual activity including masturbation. Masturbation without engaging in any form of partnered sexual activity was categorized as masturbation only.

These sexual behaviors are based on a set of questions regarding how often, as well as the specific sexual activities, in which the respondents engaged. NSHAP uses a broad definition of sex defining it as "any mutually voluntary activity with another person that involves sexual contact, whether or not intercourse or orgasm occurs." Initially respondents are asked about sexual partners and if they have had sex in the past year. Respondents who have had sex within the past year are asked how often the sex included vaginal intercourse, oral sex, both giving and receiving, and other types of sexual touching or intimacy. A separate question assesses the frequency of masturbation.

I conducted a preliminary analysis to determine the best model fit of different combinations of categories using Bayesian information criterion (BIC). BIC approximation accounts for uncertainty when there are many models to choose from (Raftery 1995). I created different combinations of sex acts in which people engaged. All models included no sex, and masturbation only but had different combinations of other sex acts which either emphasized masturbation in addition to partnered sex or oral sex in addition to partner sex. The final model, with the lowest BIC, was the best fit and included the four final variables--no sex, masturbation only, sex that includes PVI and sex that does not include PVI.

The patterns of sexual behaviors were based on the following questions: For PVI, the question asks, “During the past 12 months, how often did your activities include vaginal sex?” The response categories are always, usually, sometimes, rarely, never, don’t know, and refused. For oral sex, the question asks “When you had sex with (PARTNER) in the last 12 months, how often did (he/she) perform oral sex on you? It also asked how often “How often did you perform oral sex on (him/her)?” The response categories included always, usually, sometimes, rarely, never, don’t know, and refused. These were combined into one single indicator for oral sex. For other types of sexual intimacy, the respondent was asked, “When you had sex with (PARTNER) in the last 12 months, how often did your activities include kissing, hugging, caressing, or other ways of sexual touching?” The response categories included always, usually, sometimes, rarely, never, don’t know, and refused. For the masturbation question, NSHAP asks, “Masturbation is a very common practice. By masturbation, we mean stimulating your genitals (sex organs) for sexual pleasure, not with a sexual partner. On average, in the past 12 months how often did you masturbate?” The response categories were not at all this year, one–two times a year, three–five times a year, every other month, once a month, two–three times a month, once a week, several times a week, every day, and more than once a day. Because I am not interested in frequency, but engagement in particular activities, I dichotomized these responses into either participating in the sexual activity or not.

Self-rated health. Self-rated health is indicated by the question, “Would you say your health is excellent, very good, good, fair, or poor?” It also includes categories for don’t know and refused.

3.3.2 Independent Variables

Demographic variables. Gender is coded 1 for females and 0 for males. Age is a continuous variable that ranges from 57 to 85. Race and Ethnicity is self-report of respondents' racial or ethnic identity. It is based on two questions. First, "Do you consider yourself primarily white or Caucasian, Black or African American, American Indian, or something else?" and second, "Do you consider yourself Hispanic or Latino?" I created three dummy variables indicating White, non-Hispanic Black, Hispanic, and Other. Socioeconomic status is usually measured via income, wealth, and occupational prestige. Because older adults, who are often retired have a different relationship to the labor market, this is a difficult concept to measure and is often measured through education alone. Education is four dummy variables indicating less than a high school degree, a high school degree or equivalent, some college, to those with a bachelor's degree or more. Marital status is also a series of dummy variables. Respondents are asked their marital status in the NSHAP. The response options are married, living with a partner, divorced, separated, widowed, and never married. I coded these as three dummy variables: married or cohabiting, divorced or separated, and widowed or never married.

Health of a partner. In the NSHAP, the respondents are asked, "In the last year of your relationship, would you say (PARTNER'S) health was excellent, very good, good, fair, or poor. There are also responses for don't know and refused. Because all of the respondents did not necessarily have partners, I created dummy variables that operationalized having a partner in excellent health, very good health, good health, fair health, and poor health. For example, for the variable Partner Health Excellent, everyone who had a partner in excellent health was equal to yes, and everyone who had a partner in poor, fair, good, or very good health, and everyone who did not have a partner was equal to no.

Disability. For respondent disability, NSHAP asks a series of questions regarding functional health that are answered on a scale from no difficulty to unable to do. They include a number of activities of daily living including dressing, getting in and out of bed, and toileting, but they also include walking one block, walking across a room, and driving. I used these questions to create a scale that operationalized functional status.

Relationship Quality. Relationship quality is operationalized with the question, "Taken all together, how would you describe your (marriage/relationship) with (PARTNER) on a scale from one to seven with one being very unhappy and seven being very happy? There are also responses for don't know and refused.

Satisfaction with Frequency of Sex. Satisfaction with the amount of sex respondents are having is measured by the question, "During the past 12 months, would you say that you had sex:" The response categories are much more often than you would like, somewhat more often than you would like, about as often as you would like, less often than you would like, much less often than you would like, don't know, and refused. Because this range included both dissatisfaction with too much sex and too little sex, I created three dummy variables: satisfied with frequency, would prefer more sex, and would prefer less sex.

Relationship & Sexual Satisfaction. Relationship and sexual satisfaction is measured using two questions. First, NSHAP asks, "How physically pleasurable did/do you find your relationship with (PARTNER) to be?" The second question asks, "How emotionally satisfying did/do you find your relationship with (him/her) to be?" The response categories are extremely satisfying, very satisfying, moderately satisfying, slightly satisfying, and not at all satisfying.

Interest in Sex. Interest in sex is measured using two questions. First the NSHAP asks, "For some people, sex is a very important part of their lives, and for others it is not very

important at all. How important a part of your life would you say that sex is?" The response categories are extremely important, very important, moderately important, somewhat important, not at all important, don't know and refused. The second question asks "About how often do you think about sex?" The responses ranged from less than once a month, one to a few times a month, one to a few times a week, every day, several times a day, don't know, and refused.

Social Support. Perceived social support was operationalized by scale created by summing the results of 6 questions "How often can you open up to members of your family?" "How often can you rely on members of your family?" "How often can you open up to your friends?" "How often can you rely on your friends?" "How often can you open up to your spouse or partner?" "How often can you rely on your spouse or partner?" The response categories were often, some of the time, rarely, and never.

Loneliness. Loneliness was operationalized through a scale made up of three questions: "How often do you feel that you lack companionship?" "How often do you feel left out?" And "How often do you feel isolated from others?" The response categories were often, some of the time, rarely, and never.

Caregiving. Caregiving is operationalized by the amount of hours per day the respondent cares for another adult. First, the respondent is asked, "Are you currently assisting an adult who needs help with day-to-day activities because of age or disability?" If the respondent answers yes, they are then asked, "How many hours per day do you typically spend caring for this person?"

Table two shows the descriptive statistics of the sample in terms of the variables in these analyses. For all variables, 'refused' and 'I don't know' were set to missing.

Table 1. Measures

Variable Name	Description	Values
Dependent Variables		
Sex with PVI	PVI Only PVI and intimate contact Masturbation and PVI Masturbation, intimate contact, and PVI Oral sex and PVI Oral sex, intimate contact, and PVI Oral sex, masturbation, and PVI Oral sex, intimate contact, masturbation, and PVI	Yes No
Sex without PVI	Intimate contact Masturbation and intimate contact Oral sex and intimate contact	Yes No
Masturbation Only	Masturbation	Yes No
No Sex	No Sex	Yes No
Self-rated Health	Would you say your health is excellent, very good, good, fair, or poor?	Excellent Very Good Good Fair Poor Don't Know Refused
Dependent Variables		
Gender	Please indicate the gender of the respondent. If unclear ask: I am required to ask you the following: are you male or female?	Male Female
Age	In what month, day, and year were you born?	____(Month)__(Day)____(year)____
Race/Ethnicity	5. Do you consider yourself primarily white or Caucasian, Black or African American, American Indian, or something else? 6. Do you consider yourself Hispanic or Latino?	White, non-Hispanic Black Hispanic Other
Educational Attainment	What is the highest degree or certification you have earned	Less than high school High School or equivalent Some college College of more
Marital Status	Are you currently married, living with a partner, separated, divorced, widowed, or have you never been married?	Married/Cohabitating Divorced/Separated Widowed/Never married
Partner Health Excellent/Very Good	Partner health Excellent or Very good, Good, Fair or poor, or no partner in the last year	Yes No
Respondent Disability	We are interested in what activities are easy or difficult for you. Please tell me how much difficulty you have with each activity. Exclude any difficulties that you expect to last less than three months.	
	Walking on block?	No Difficulty Some Difficulty Much Difficulty Unable to Do IF Volunteered, Have Never Done Don't Know

		Refused
	Walking across a room?	No Difficulty Some Difficulty Much Difficulty Unable to Do IF Volunteered, Have Never Done Don't Know Refused
	Dressing, including putting on shoes and socks?	No Difficulty Some Difficulty Much Difficulty Unable to Do IF Volunteered, Have Never Done Don't Know Refused
	Bathing or Showering?	No Difficulty Some Difficulty Much Difficulty Unable to Do IF Volunteered, Have Never Done Don't Know Refused
	Eating, such as cutting up your food?	No Difficulty Some Difficulty Much Difficulty Unable to Do IF Volunteered, Have Never Done Don't Know Refused
	Getting in or out of bed?	No Difficulty Some Difficulty Much Difficulty Unable to Do IF Volunteered, Have Never Done Don't Know Refused
	Using the toilet, including getting up and down?	No Difficulty Some Difficulty Much Difficulty Unable to Do IF Volunteered, Have Never Done Don't Know Refused
Relationship Quality	Taken all together, how would you describe your (marriage/relationship) with (PARTNER) on a scale from 1 to 7 with 1 being very unhappy and 7 being very happy?	1 Very Unhappy 2 3 4 5 6 7 Very Happy Don't Know Refused
Satisfaction with Sexual Frequency	During the past 12 months (IF PARTNER NOT CURRENT: During your relationship), would you say that you had sex:	Much more often than you would like Somewhat more often than you would like About as often as you would like Less often than you would like Much less often than you would like Don't know Refused

Sexual Satisfaction	How physically pleasurable did/do you find your relationship with (Partner) to be?	Extremely Very Moderately Slightly Not at all Don't Know Refused
	How emotionally pleasurable did/do you find your relationship with (Partner) to be	Extremely Very Moderately Slightly Not at all Don't Know Refused
Satisfaction with Frequency	During the past 12 months (If partner not current, during your relationship) would you say that you had sex?	Much more often than you would like Somewhat more often than you would like About as often as you would like Much less often than you would like Don't Know Refused
Sexual Interest	For some people, sex is a very important part of their lives, and for others it is not very important at all. How important a part of your life would you say that sex is?	Extremely important Very important Moderately important Somewhat important Not at all important Don't Know Refused
	About how often do you think about sex?	Less than once a month One to a few times a month One to a few times a week Every day Several times a day Don't know Refused
Social Support	How often can you open up to members of your family?	Often Some of the time Rarely Never Don't know Refused
	How often can you rely on members of your family?	Often Some of the time Rarely Never Don't know Refused
	How often can you open up to your friends?	Often Some of the time Rarely Never Don't know Refused
	How often can you rely on your friends?	Often Some of the time Rarely Never Don't know Refused
	How often can you open up top our spouse or partner?	Often Some of the time

		Rarely Never Don't know Refused
	How often can you rely on your spouse or partner?	Often Some of the time Rarely Never Don't know Refused
Loneliness	How often do you feel that you lack companionship?	Often Some of the time Rarely Never Don't know Refused
	How often do you feel left out?	Often Some of the time Rarely Never Don't know Refused
	How often do you feel isolated from others?	Often Some of the time Rarely Never Don't know Refused
Caregiving	Are you currently assisting an adult who needs help with day-to-day activities because of age or disability?	Yes No
	How many hours per day do you typically spend caring for this person?	Less than 2 hours 2 hours or more but less than 4 hours 4 to 8 hours More than 8 hours All of the time

The purpose of this study is to investigate the sexual behavior of older adults, and the relationship between aging and health from a feminist gerontological perspective. In chapter four, I examine the patterns of sex in which older adults engage and their relationship to social position, health, and relationship characteristics. In chapter five, I look at the relationship between health, patterns of sex, and demographics. In chapter six, I examine the relationship between health, patterns of sex, and other social and relationship factors. Finally, in chapter seven I discuss the results, implications, limitations, and future research.

Table 2. Sample Characteristics

	N	%	Mean	Min-Max	SD
Gender					
Female	1,551	51.6			
Male	1,454	48.4			
Age			69.3	57-85	7.853
Race/ethnicity					
White	2,110	70.2			
Black	509	16.9			
Hispanic	304	10.1			
Other race	70	2.3			
Education					
Bachelor's or more	657	21.9			
Some college/vocational training/ associate's degree	856	28.5			
High school diploma or equivalent	793	26.4			
Less than high school diploma	699	23.3			
Marital status					
Married/cohabitating	1,861	61.9			
Divorced or separated	372	12.4			
Widowed or never married	772	25.7			
Partner Health					
Excellent	281	9.4			
Very good	609	20.3			
Good	572	19.0			
Fair	391	13.0			
Poor	160	5.3			
Respondent Self-rated health					
Excellent	360	12.0			
Very good	921	30.8			
Good	906	30.3			
Fair	582	19.4			
Poor	224	7.5			
Respondent disability			1.244	0-21	2.495
Relationship quality			5.939	1-7	1.552
Satisfaction with frequency			2.629	1-5	0.908
Sexual satisfaction					
Physically			2.873	0-4	0.995
Emotionally			2.858	0-4	1.01
Interest in sex					
How often thinks about sex			2.075	0-5	1.351
How important is sex			2.59	1-5	1.248

4 PATTERNS OF SEX

As detailed in Chapter three, the first research question explores variability in sexual activity of older adults. First, I report descriptive statistics regarding the types of sexual behavior that older adults engage in including no sexual activity, PVI, masturbation, oral sex, and intimate contact (hugging, kissing, touching). Then I ask specifically, how does type, frequency and perceived quality of such activities vary across social groups (i.e. gender, age, functional status, relationship status, and self-rated health). Furthermore, what is the utility of measuring older adults' sex behavior exclusively as frequency of PVI as compared to other characterizations of sexual behavior? Initially, I conduct descriptive analysis of the types of sex in which older adults engage. Using chi-square tests and one-way ANOVAs, I examine the significance of differences on types of sex for difference categories of older adults. Finally, I conduct a multinomial regression to assess the relative impact of the demographic variables, health characteristics, partnership characteristics, satisfaction functional status, relationship status, relationship quality, interest in sex, and satisfaction with frequency of sex on engaging in sexual behaviors.

4.1 Frequencies of Different Sex Acts

Table 3 reports the frequencies of different sex acts (see Table 3) for different social groups of older adults. Women, people of color, the oldest, married and cohabitating people, and those with less education are less likely to be engaging in all types of sexual activity and more likely to report no sexual activity. A higher percentage of men engage in PVI, oral sex, intimate contact, and masturbation. A lower percentage of men do not engage in any sex. There is a gradient with age where a higher percentage of the oldest respondents do not engage in PVI, oral sex, intimate contact, and masturbation.

Table 3. Characteristics of Respondents Who Engage in Different Sex Acts

	No Sex		PVI		Oral Sex		Intimate Contact		Masturbation	
	N	%	N	%	N	%	N	%	N	%
Gender										
Male	330	3.4	452	27.3	312	10.8	857	28.8	370	14.6
Female	754	30.7	802	15.4	160	5.5	489	16.5	159	12.3
Age										
57-64	214	8.7	638	21.7	269	9.3	656	22.1	248	9.8
65-74	371	15.1	452	15.4	163	5.6	501	16.9	194	7.6
75-85	499	20.3	164	5.6	40	1.4	189	6.4	87	3.4
Race/ethnicity										
White	748	30.5	998	34.0	377	13.1	986	33.3	433	17.1
Black	205	8.4	173	5.9	39	1.4	177	6.0	68	2.7
Hispanic	103	4.2	140	4.8	41	1.4	144	4.9	27	1.1
Other race	23	0.9	82	2.8	12	0.4	34	1.1	44	1.7
Education										
College degree or higher	153	6.2	350	11.9	168	5.8	387	13.0	367	14.4
Some college/vocational training/ associate's degree	286	11.6	405	13.8	162	5.6	433	14.6	146	5.7
High school diploma or equivalent	328	3.3	291	9.9	95	3.3	315	10.6	117	4.6
Less than high school diploma	317	12.9	208	7.1	47	1.6	211	7.1	70	2.8
Marital status										
Married or cohabitating	424	17.2	1,091	37.1	373	12.9	1,166	39.2	336	13.2
Divorced or separated	171	7.0	97	3.3	55	1.9	102	3.4	84	3.3
Widowed or never married	489	19.9	704	2.2	44	1.5	78	2.6	109	4.2

A higher percentage of whites engage in PVI, oral sex, intimate contact, and masturbation, but also do not engage in any sex in comparison to Blacks, Hispanics, and Other Races. In terms of education, those with higher levels of education engage in PVI, oral sex, intimate contact, and masturbation at higher rates. Those with some college and those with less than a high school diploma have the highest percentage of not engaging in any sex. Finally, in terms of marital status, those who are married have higher rates of PVI, oral sex, intimate contact, and masturbation, than those who are divorced or separated and widowed or never married. Those who are widowed and never married have a higher percentage of not engaging in any sex, and a lower percentage of engaging in PVI, oral sex, intimate contact, and touching, and masturbation.

The descriptive statistics in Table 3 show demographic unadjusted differences in sexual behaviors. With a few exceptions, the most privileged in terms of race, class, and gender are those that are having the most sex of any type. As for exceptions, there seems to be a bimodal

relationship with education and sexual activity. Those with some college and less than a high school degree have a higher percentage of not engaging in any sex. And in terms of marital status, people who are married and cohabitating have a higher percentage of not engaging in any sex in comparison to those who are divorced or widowed. This finding speaks to the need for more nuanced analysis.

Examining the types of sexual activity in isolation and not in combination does not illustrate the variety of sexual and intimate behavior in which people engage. A more nuanced model addresses not only who is doing what but also how many people are not engaging in sexual activity at all in comparison to people who are masturbating or engaging in different types of sex acts that do not include PVI. Table 4 shows the descriptive statistics of combinations of sex acts in which older adults are engaging.

Table 4. Patterns of Sexual Behavior

	N	%
No Sex	1,051	35.0
PVI only	18	0.6
Intimate contact	37	1.2
PVI and intimate contact	507	16.9
Masturbation only	237	7.9
Masturbation and PVI	5	0.2
Masturbation and intimate contact	18	0.6
Masturbation, intimate contact, and PVI	150	5.0
Oral sex and PVI	4	0.1
Oral sex and intimate contact	12	0.4
Oral sex, intimate contact, and PVI	232	7.7
Oral sex and masturbation	6	0.2
Oral sex, masturbation, and PVI	4	0.1
Oral sex, masturbation, and intimate contact	16	0.5
Oral sex, intimate contact, masturbation, and PVI	163	5.4

By further stratifying the sexual behavior into combinations of sex acts (See Table 4), rather than discrete sex acts, I demonstrate the variation in the patterns of sex in which older adults engage. The most common pattern of sex acts includes PVI and intimate contact.

However, some older adults are engaging in many other activities besides PVI. It is important to examine how these patterns of sexual behavior vary across social groups in order to incorporate feminist gerontological perspective on older adults and sex.

4.2 Bivariate Relationships

In order to examine the bivariate relationships between the types of sex in which older adults engage and the independent variables, I use chi-square tests with the categorical independent variables and one-way ANOVAs on the continuous independent variables. Table 5 shows the bivariate relationships between patterns of sexual behavior and individual and relationship factors. The fifteen mutually exclusive patterns illustrated in table 4 have been collapsed into four broad patterns according to the Bayesian Information criterion for model selection. These four broad categories are sex with PVI, sex without PVI, masturbation only, and no sex. Sex with PVI includes PVI only; intimate contact with PVI; masturbation and PVI; masturbation, intimate contact, and PVI; oral sex and PVI; oral sex, intimate contact, and PVI; and oral sex, intimate contact, masturbation, and PVI. Sex without PVI includes intimate contact; masturbation and intimate contact; oral sex and intimate contact; and oral sex and masturbation; and oral sex, masturbation, and intimate contact.

Being female is significantly associated with being in the no sex category with more women not engaging in any sex (58.5%) in comparison to men (26.1%). In comparison to men (58.6%), fewer women (30.2%) were engaging in sex with PVI, sex without PVI (30.2% vs. 58.6%), and masturbation only (3.2% vs. 4.1%).

There were significant differences in mean age among the types of sex in which older adults engaged. The no sex category had the highest mean (mean=72.3), those in the masturbation only category were slightly younger (mean=70.2), and those in the sex without PVI

Table 5. Bivariate Relationships: Chi Square and One-Way ANOVAs

	No Sex	Masturbation Only	Sex without PVI	Sex with PVI
Gender (%)				
Female	58.5***	8.1***	3.2***	30.2***
Male	26.1***	11.2***	4.1***	58.6***
Mean age	72.3***	70.2***	68.8***	65.8***
Race/ethnicity (%)				
White non-Hispanic	40.9*	10.1*	4.0*	45.1*
Black	52.5*	8.6*	2.3*	36.6*
Hispanic	42.0*	7.3*	2.9*	47.8*
Other race	39.0*	8.5*	3.4*	49.2*
Education (%)				
Bachelors or more	25.6***	12.2***	6.3***	55.9***
Some college	38.5***	9.0***	3.2***	49.4***
HS or EQUIV	49.2***	10.1***	3.1***	37.6***
Less than HS	58.8***	7.3***	1.9***	32.0***
Marital status (%)				
Married/cohabitating	27.2***	6.3***	4.2***	62.2***
Divorced/separated	52.8***	17.2***	2.3***	27.8***
Widowed/never married	74.6***	13.8***	2.8***	8.8***
Partner health (%)				
Excellent	13.9***	2.5***	5.5***	78.1***
Very good	18.4***	4.5***	3.3***	73.9***
Good	26.5***	6.8***	5.0***	61.6***
Fair	33.4***	9.6***	5.3***	51.7***
Poor	55.5***	7.3***	5.8***	31.4***
Self-rated health (%)				
Excellent	27.0***	8.2***	3.1***	61.8***
Very good	33.9***	7.7***	3.8***	54.6***
Good	44.2***	11.8***	4.3***	39.7***
Fair	53.3***	11.4***	3.2***	32.0***
Poor	70.3***	7.1***	2.2***	20.3***
Mean functional ability	1.8***	1.2***	1.0***	.59***
Mean relationship satisfaction	5.7***	5.3***	6.0***	6.2***
Satisfaction with frequency (%)				
Would prefer more sex	39.5***	12.2***	4.7***	43.7***
Satisfied with frequency	36.0***	8.4***	3.7***	52.0 ***
Would prefer less sex	48.4***	9.4***	2.6***	39.8***
Mean sexual satisfaction				
Emotional satisfaction	2.7***	2.5***	2.7***	3.1***
Physical satisfaction	2.7***	2.7***	2.7***	3.1***
Mean interest in sex				
Think about sex	1.3***	2.2***	2.5***	2.8***
Importance of sex	1.9***	2.6***	3.0***	3.3***

N=2433

*p ≤ .05, ** p ≤ .01, *** p ≤ .01

category were significantly younger (mean=68.8), and those in the sex with PVI category were the youngest (mean=65.8) of all four groups. The F value for the one-way ANOVA examining

age differences among the four types of sex was significant [F (3, 2108) = 124.834, p < .001]. All post-hoc comparisons using the Tukey HSD test were also significant.

There were significant differences, determined by chi square test, between race and types of sex. Black older adults made up the highest percentage of those in the no sex category (52.5%), followed by Hispanic older adults (42.0%), Whites (40.9%), and those of another race (39.0%). Whites made up the highest percentage of people in the masturbation only category (10.1%), followed by Blacks (8.6%), other races (8.5%), and Hispanics (7.3%). Being White made up the largest percentage of those in the sex without PVI category (4.0%), followed by other races (3.4%), Hispanics (2.9%), and Blacks (2.3%). Other races (49.2%) made up the highest percentage of those in the sex with PVI category, followed by Hispanics (47.8%), Whites (45.1%) and Black older adults (36.6%).

There were significant differences between patterns of sex and educational attainment as determined by chi square tests. Fewer people with college degrees are in the no sex category (25.6%) in comparison to those with some college (38.5%), a high school degree (49.2%), and those with less than a high school degree (58.8%). More people with college degrees are in the masturbation only category (12.2%) in comparison to those with some college (9.0%), a high school degree (10.1%), and those with less than a high school degree (7.3%). More people with college degrees are also in the sex without PVI category (6.3%) in comparison to those with some college (3.2%), a high school degree (3.1%), and those with less than a high school degree (1.9%). Finally, those with a college degree made up the highest percentage of those in the sex with PVI category (55.9), followed by those with some college (49.4%), a high school degree (37.6%), and less than a high school degree (32.0%). There is a clear relationship between higher educational attainment and engaging in sex of all types.

As determined by chi square test, there are significant differences between marital status and patterns of sex. Those who were married or cohabitating made up the highest percentage of those in the sex with PVI category (62.2%) in comparison to those who are divorced or separated (27.8%) and widowed or never married (8.8%). Those who were married or cohabitating made up the highest percentage of those in the sex without PVI category (4.2%) in comparison to those who are divorced or separated (2.3%) and widowed or never married (2.8%). Those who were widowed or never married made up the highest percentage of those not engaging in any sex (74.6%), in comparison to those who are divorced or separated (52.8%) and married or cohabiting (27.2%). Those who were divorced or separated made up the highest percentage of those only masturbating (17.2%), in comparison to those who are widowed or never married (13.8%) and married or cohabiting (6.3%).

As determined by chi square test, there were significant differences between partner health and patterns of sex. Those who had partners in excellent health made up the largest percentage of those in the sex with PVI category (78.1%), followed by partners in very good health (73.9%), good health (61.6%), fair health (51.7%), and poor health (31.4%). Those who had partners in excellent health also made up the smallest percentage of those in the no sex category (13.9%), followed by partners in very good health (18.4%), good health (26.5%), fair health (33.4%), and poor health (55.5%). Sex without PVI was a little more evenly distributed with those who had partners in poor health making up the highest percentage (5.8%), followed by partners in excellent health (5.5%), good health (5.0%), fair health (3.3%), and very good health (3.3%). Finally, those in fair health (9.6%) made up the largest percentage of the masturbation only category in comparison to poor health (7.3%), good health (6.8%), very good health (4.5%), and excellent health (2.5%).

As determined by chi square test, there were significant differences between Self-rated health and patterns of sex. Older adults who were in excellent health made up the largest percentage of those in the sex with PVI category (61.8%), followed by partners in very good health (54.6%), good health (39.7%), fair health (32.0%), and poor health (20.3%). Older adults who rated their health as excellent also made up the smallest percentage of those in the no sex category (27.0%), followed by very good health (33.9%), good health (44.2%), fair health (53.3%), and poor health (70.3%). Sex without PVI was a little more evenly distributed with older adults who rated their health as good making up the highest percentage (4.3%), followed by very good health (3.8%), fair health (3.2%), excellent health (3.1%), and poor health (2.2%). Older adults who rated their health as good (11.8%) made up the largest percentage of the masturbation only category in comparison to fair health (11.4%), excellent health (8.2%), very good health (7.7%), and poor health (7.1%).

There were significant mean differences in functional ability among the types of sex. Those with the least amount of functional disabilities (mean=.59) were in the sex with PVI category, in comparison to those in the Sex without PVI category (mean=1.0), the Masturbation only category (mean=1.2) and those in the no sex category (mean=1.8). The F value for the one-way ANOVA examining the differences in functional ability among the four types of sex was significant [$F (3, 2108) = 43.905$, $p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between no sex and each other category were significant ($p < .05$). The mean difference between masturbation and sex with PVI was also significant ($p < .01$). There were no significant mean differences between sex with PVI and sex without PVI.

There were significant mean differences in relationship satisfaction among the types of sex in which older adults engaged. Those with the lowest relationship satisfaction (mean=5.7)

were in the no sex category and the masturbation only category (mean=5.3). Those with greater relationship satisfaction were in the sex without PVI category (mean=6.0) and the sex with PVI category (mean=6.2). The F value for the one-way ANOVA examining the differences in functional ability among the four types of sex was significant [$F (3, 2108) = 30.685$, $p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between no sex and sex with PVI was significant ($p < .001$). The mean difference between no sex and masturbation was significant ($p < .01$). The mean difference between masturbation and sex with PVI was significant ($p < .001$). The mean difference between masturbation and sex without PVI was significant ($p < .01$). Again, there were no significant mean differences between sex with PVI and sex without PVI in mean relationship satisfaction.

As determined by chi square test, there were significant differences between satisfaction with frequency of sex and patterns of sex, but there was no clear trend. Older adults who were unsatisfied with too infrequent sex made up the largest percentage of those in the sex with PVI category (52.0%), followed by no sex (48.4%), masturbation only (12.2%), and sex without PVI (4.7%), and poor health (20.3%). Older adults who were satisfied with frequency of sex made up the largest percentage of those in the no sex category (48.4%), followed by sex with PVI (39.8%), masturbation only (9.4%), and sex without PVI (2.6%).

There were mean differences in emotional satisfaction with sex among the types of sex in which older adults engaged. Older adults with the lowest emotional satisfaction (mean=2.5) were in the masturbation only category. Older adults with the highest emotional satisfaction were in the sex with PVI category. The means for no sex and sex without PVI were the same (mean=2.7). The F value for the one-way ANOVA examining the differences in physical satisfaction among the four types of sex was significant [$F (3, 2108) = 46.324$, $p < .001$]. Post-

hoc comparisons using the Tukey HSD test indicated that the mean difference between no sex and sex with PVI was significant ($p < .001$). The mean difference between masturbation and sex with PVI was significant ($p < .001$). The mean difference between sex without PVI and sex with PVI was significant ($p < .01$).

Older adults with the highest physical satisfaction were in the sex with PVI category. No sex, masturbation only, and sex without PVI categories had the same mean physical satisfaction (mean=2.7). The F value for the one-way ANOVA examining the differences in physical satisfaction among the four types of sex was significant [$F (3, 2108) = 44.008$, $p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between no sex and sex with PVI was significant ($p < .001$). The mean difference between masturbation and sex with PVI was significant ($p < .001$). The mean difference between masturbation and sex without PVI was significant ($p < .001$).

Interest in sex was operationalized as the amount one thinks about sex and how important one rates sex. There were significant mean differences in both interest and importance among the types of sex older adults were having. Older adults who have a higher mean of thinking about sex (mean=2.8) were in the sex with PVI category. This was followed by the sex without PVI category (mean=2.5), the masturbation only category (mean=2.2), and the no sex category (mean=1.3). The F value for the one-way ANOVA examining the differences in thinking about sex among the four types of sex was significant [$F (3, 2108) = 300.988$, $p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between no sex and sex with PVI was significant ($MD = -1.565$, $p < .001$). The mean differences between no sex and each other category were significant ($p < .001$). The mean difference between masturbation and sex with PVI was also significant ($MD = -.600$, $p < .001$).

There were mean differences between placing a higher importance on sex among the types of sex in which older adults engaged. Those in the sex with PVI category had the highest mean (mean=3.3). This was followed by the sex without PVI category (mean=3.0), the masturbation only category (mean=2.6), and the no sex category (mean=1.9). The F value for the one-way ANOVA examining the differences in physical satisfaction among the four types of sex was significant [$F (3, 2108) = 228.249$, $p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean differences between no sex and each other category ($p < .001$). The mean difference between masturbation and sex with PVI was significant ($p < .001$). The mean difference between masturbation and sex without PVI was significant ($p < .001$).

In addition to the frequencies of different sex acts (Table 1) these descriptive statistics (Table 2) give the impression that those that are in the most privileged social categories (White, male, and highly educated) are having the most sex (both with and without PVI). They are also the people that are in the best health, have the highest rates of relationship quality and thinking sex is important. A more nuanced analysis, which predicts the types of sexual behaviors that people engage in, using variables that take into account interest, desire, and satisfaction with frequency, may better explain the sexual activity of older adults. In the first research question, I hypothesized that demographic variables, functional status, health and sexual health of one's partner, relationship status, relationship quality, interest in sex, and satisfaction with frequency of sex will be associated with differences in engaging in sexual behaviors and with which social groups are aging successfully according to current definitions. To answer this, I use multinomial regression.

4.3 Multinomial Regression

The multinomial regression was used to predict the types of sex acts and patterns of sex acts: no sex acts, masturbation only, any combination of sex acts that includes PVI, and any combination of sex acts that do not include PVI. Results are presented in Table 6 in four models.

4.3.1 Model One: Demographics

Model one predicts patterns of sexual acts using with demographic variables. In model one, age, gender, education, and race are all associated with whether or not people are engaging in sexual activity and whether or not it includes PVI. In comparison to men, women have a 240.2% significant higher odds of not engaging in any sexual activity. Being older is significantly associated with a 11.7% greater odds of not engaging in any sexual activity and 7.3% greater odds of only engaging in masturbation relative to engaging in sex that includes PVI. Being Black is the only race variable with a significant association. In comparison to being White, being Black is significantly associated with a 41.4% lower odds of only engaging in masturbation relative to sex with PVI but it is not significant in other ways. In comparison to those with a college degree, having lower educational attainment is associated with a higher odds of not engaging in sexual activity. In comparison to those with a college degree, those with a high school diploma had a 56.4% significant higher odds of not engaging in sexual activity. Older adults with less than a high school diploma had a 59.8% significant higher odds of not engaging in any sexual activity. Additionally, in comparison to those with a college degree, those with some college had a 48.9% significant lower odds of engaging in sex that does not include PVI. Those with a high school diploma had a 48.4% significant lower odds of engaging in sex that does not include PVI. And those with less than a high school diploma had a 66.1% significant

Table 6. Multinomial Regression Predicting Patterns of Sex

	Model 1			Model 2			Model 3			Model 4		
	No Sex	Masturbation Only	Sex without PVI	No Sex	Masturbation Only	Sex without PVI	No Sex	Masturbation Only	Sex without PVI	No Sex	Masturbation Only	Sex without PVI
Intercept	1.862***	1.027***	3.216***	1.942***	2.400***	3.543***	2.118***	2.602***	3.731***	2.436***	2.896***	4.118**
	(.621)	(0.812)	(1.168)	(.664)	(0.875)	(1.265)	(.751)	(.957)	(1.317)	(.890)	(1.063)	(1.415)
Gender												
Female	3.402***	1.027	.459	3.218***	.928	1.590	3.882***	1.095	1.474	1.902***	.852	1.206
	(.119)	(.167)	(.237)	(0.121)	(.173)	(.239)	(.140)	(.189)	(.252)	(.169)	(.212)	(.271)
Age	1.117***	1.073***	1.583	1.120***	1.081***	1.055**	1.123***	1.088***	1.059***	1.110***	1.078***	1.055**
	(.008)	(.011)	(.237)	(.008)	(.011)	(.016)	(.009)	(.012)	(0.017)	(.011)	(.013)	(.017)
Race/Ethnicity												
Black	.787	.586*	.633	0.756	.545*	.624	.756	.570*	.556	.800	.641	.504
	(.172)	(.242)	(.387)	(.175)	(.250)	(.389)	(.192)	(.262)	(.410)	(.226)	(.278)	(.439)
Hispanic	.839	.690	.861	.811	0.647	.855	.845	.670	.859	.888	.574	.902
	(.205)	(.305)	(.441)	(.208)	(.315)	(.441)	(.229)	(.331)	(.445)	(.274)	(.378)	(.453)
Other Race	.896	.632	.639	.883	.639	.643	.813	.631	.603	.879	.767	.695
	(.356)	(.524)	(.756)	(.360)	(.532)	(.756)	(.395)	(.549)	(.786)	(.495)	(.247)	(.772)
Education												
Some college	1.206	.758	.511*	1.208	.784	.528*	1.178	.856	.542*	.950	.767	.530*
	(.163)	(.212)	(.289)	(.166)	(.217)	(.290)	(.183)	(.232)	(.295)	(.210)	(.247)	(.303)
HS diploma or equivalent	1.564**	.886	.516*	1.617**	.905	.535*	1.695**	1.018	.502*	1.175	.906	.445*
	(.167)	(.217)	(.310)	(.169)	(.224)	(.312)	(.183)	(.238)	(.322)	(.212)	(.252)	(.334)
Less than HS diploma	1.598*	.618	.339**	1.567*	.604	.351*	1.666*	.686	.372*	1.098	0.601	.321**
	(.192)	(.266)	(.410)	(.195)	(.274)	(.411)	(.214)	(.291)	(.416)	(.252)	(.315)	(.442)
Marital status												
Divorced or separated	3.467***	5.158***	1.695	2.682***	3.215***	1.497	4.110***	4.654***	2.002	5.043***	6.260***	2.468
	(.202)	(.256)	(0.462)	(.211)	(.275)	(.472)	(.232)	(.297)	(.467)	(.281)	(.314)	(.488)
Widowed or never married	7.551***	8.508***	5.274***	6.848***	7.936***	4.918***	10.438***	11.246***	5.837***	11.794***	13.992***	6.941***
	(.206)	(.262)	(.397)	(.210)	(.270)	(.401)	(.226)	(.289)	(.412)	(.274)	(.308)	(.419)

Table 6. Continued- Multinomial Regression Predicting Patterns of Sex

	Model 1			Model 2			Model 3			Model 4		
	No Sex	Masturbation Only	Sex without PVI	No Sex	Masturbation Only	Sex without PVI	No Sex	Masturbation Only	Sex without PVI	No Sex	Masturbation Only	Sex without PVI
Partner health												
Very good	.365***	.275***	.783	.393***	.315***	.797	.275***	.248***	.714	.298***	.212***	.686
	(.194)	(.288)	(.404)	(.195)	(.295)	(.405)	(.219)	(.316)	(.415)	(.262)	(.337)	(.430)
Good	.466***	.415**	1.320	.482***	.442**	1.312	.352***	.307***	1.100	.354***	.277***	1.177
	(.190)	(.270)	(.383)	(0.192)	(.277)	(.384)	(.212)	(.303)	(.393)	(.253)	(.319)	(682)
Fair	.678	.800	1.826	.689	.829	1.794	.413***	.524*	1.418	.477**	.519*	1.521
	(0.207)	(.282)	(.420)	(.209)	(.289)	(.421)	(.233)	(.312)	(.430)	(.274)	.328	(.435)
Poor	1.584	1.073	3.772*	1.591	1.085	3.602*	1.172	.761	2.694	1.294	.754	3.013
	(.267)	(.413)	(.516)	(.268)	(.418)	(.516)	(.288)	(.433)	(.528)	(.342)	(.526)	(.536)
Respondent SRH												
Very good	2.100***	1.607	1.603	2.062***	1.543	1.564	2.087**	.248***	1.626	2.481**	1.749	1.535
	(.203)	(.279)	(.401)	(.206)	(.288)	(.402)	(.224)	(.316)	(.405)	(.266)	(0.319)	(.413)
Good	2.885***	2.960***	2.414*	2.837***	2.848***	2.344*	2.770***	.307***	2.225*	2.781**	2.533**	2.092
	(0.205)	(.275)	(.401)	(.209)	.283	(.402)	(.226)	(.303)	(.407)	(.266)	(.318)	(.414)
Fair	2.937***	2.735***	1.602	2.887***	2.522**	1.430	2.290**	.524*	1.236	2.323**	2.023	1.288
	(.230)	(.308)	(.480)	(.234)	(.319)	(.489)	(.254)	(.312)	(.493)	(.302)	(.362)	(.502)
Poor	5.730***	2.310	1.706	5.758***	2.114	1.618	4.122***	.761	1.251	4.755***	1.454	1.279
	(.309)	(.455)	(.694)	(.312)	(.472)	(.695)	(.337)	(.433)	(.697)	(.396)	(.526)	(.712)
Respondent disability	1.138***	1.100*	1.116	1.144***	1.106*	1.126*	1.139***	1.122*	1.140*	1.161***	1.135*	1.145*
	(.031)	(0.042)	(.060)	(0.031)	(.044)	(.060)	(.034)	(.046)	(.060)	(.041)	(.051)	(.067)
Relationship quality				0.848***	.726***	0.892	.971	.886	1.129	0.967	0.887	1.169
				(.043)	(.053)	(.088)	(.057)	(.071)	(.118)	(0.068)	(.078)	(0.126)
Satisfaction with frequency												
Would prefer more sex							3.421***	3.376***	1.594	4.385***	4.011***	1.556
							(.148)	(.201)	(.260)	(.173)	(.215)	(.270)
Would prefer less sex							.690	.653	.598	.509*	.571	.632
							(.254)	(.346)	(.515)	(.308)	(.383)	(.530)

Table 6. Continued- Multinomial Regression Predicting Patterns of Sex

	Model 1			Model 2			Model 3			Model 4		
	No Sex	Masturbation Only	Sex without PVI	No Sex	Masturbation Only	Sex without PVI	No Sex	Masturbation Only	Sex without PVI	No Sex	Masturbation Only	Sex without PVI
Sexual satisfaction												
Physically pleasurable							.685***	.705**	.613**	0.792*	.750*	.637**
							(.089)	(.116)	(.162)	(.104)	(.126)	(.170)
Emotionally satisfying							.986	.818	0.810	1.045	.929	.800
							(.094)	(.121)	(0.177)	(.111)	(.132)	(.222)
Interest in sex												
How often thinks about sex										0.492***	.752**	.837
										(0.079)	(.095)	(.126)
How important is sex										.548***	.705***	.891
										(.077)	(.092)	(.129)
Pseudo r-square		.422			.419			.472			.546	

N=2433

*p ≤ .05, ** p ≤ .01, *** p ≤ .01

Note: Odds ratios are listed first in each cell; Standard deviations are listed second.

References are: Sex with PVI, Male, White, College degree or more, Partner health excellent, Self-rated health excellent, Satisfaction with frequency

lower odds of engaging in sex that does not include PVI relative to engaging in sexual activity that includes PVI.

Marital status is also associated with whether or not people are engaging in sexual activity and whether or not it includes PVI. In comparison to those that are married, those that are divorced or separated have a 246.7% significant higher odds of not engaging in any sexual activity, as well a 415.8% significant higher odds of only engaging in masturbation relative to engaging in sex with PVI. In

comparison to those that are married, those that are widowed or have never been married have a 655.1% significant higher odds of not engaging in any sexual activity, a 750.8% significant higher odds of only engaging in masturbation, and a 427.4% significant higher odds of engaging in sex that does not include PVI, relative to engaging in sex that includes PVI.

In comparison to having a partner in excellent health, older adults that have a partner in very good health have a 63.5% significant lower odds of not engaging in any sex and a 2.5% lower odds of engaging in masturbation only. Older adults that have a partner in good health have a 53.4% significant lower odds of not engaging in any sex and a 58.5% significant lower odds of engaging in masturbation only in comparison to having a partner in excellent health. Also in comparison to having a partner in excellent health, older adults in poor health have a 277.2% significant higher odds of engaging in any sexual activity that does not include PVI relative to engaging in sex that includes PVI.

Self-rated health and functional status are both associated with engaging in sexual activity and whether or not it includes PVI. In comparison to those with excellent self-rated health, older adults with very good self-rated health have a 110% significant higher odds of not engaging in any sexual activity. In comparison to those with excellent self-rated health, older adults with good self-rated health have a 188.5% significant higher odds of not engaging in any sexual activity, a 196.0% significant higher odds of engaging in masturbation only, and a 141.4% significant higher odds of engaging in sex that does not include PVI relative to sex with PVI. Also in comparison to those with excellent self-rated health, older adults with fair self-rated health have a 193.7% significant higher odds of not engaging in any sexual activity and a 173.5% significant higher odds of engaging in masturbation only relative to sex that includes PVI. In comparison to older adults who are in excellent self-rated health, those in poor self-rated

health have a 473.0% significant higher odds of not engaging in any sexual activity relative to sex which includes PVI. Older adults with more difficulty with more activities of daily living have a 13.8% significantly higher odds of not engaging in any sexual activity and a 10.0% significant higher odds of only engaging in masturbation relative to sex with PVI.

4.3.2 Model Two: Relationship Quality

In model two, I controlled for relationship satisfaction, which is associated with a 15.2% significant lower odds of not engaging in any sex as well as a 27.4% lower odds of only engaging in masturbation relative to sex which includes PVI. After controlling for relationship satisfaction, age, gender, and education are all still significantly associated with whether or not people are engaging in sexual activity and whether or not it includes PVI.

In comparison to men, women have a 221.8% significant higher odds of not engaging in any sexual activity. The magnitudes of the association is similar to model one. Those who are older have a 12.0% significant higher odds of not engaging in any sexual activity, an 8.1% significant higher odds of only engaging in masturbation. Engaging in sex without PVI becomes significant. Relative to engaging in sex that includes PVI, older adults with increasing age have a 5.5% higher odds of engaging in sex that does not include PVI.

After controlling for relationship quality, the associations between educational attainment and whether or not people are engaging in sexual activity and whether or not it includes PVI remain significant with similar magnitudes. In comparison to those with a college degree, those with a high school diploma had a 61.7% significantly higher odds of not engaging in sexual activity. Older adults with less than a high school diploma had a 56.7% significantly higher odds of not engaging in any sexual activity. Furthermore, in comparison to those with a college degree, those with some college had a 47.2% significantly lower odds of engaging in sex that

does not include PVI. Older adults with a high school diploma had a 46.5% significantly lower odds of engaging in sex that does not include PVI. And those with less than a high school diploma had a 64.9% significantly lower odds of engaging in sex that does not include PVI relative to engaging in sexual activity that includes PVI.

Marital status remains significantly associated with whether or not people are engaging in sexual activity and whether or not it includes PVI after controlling for relationship satisfaction. In comparison to respondents who are married, those who are divorced or separated have a 168.2% significantly higher odds of not engaging in any sexual activity and a 221.5% significantly higher odds of only engaging in masturbation only relative to sex with PVI. Although the direction of the association remains the same, the magnitude of the association decreases. Respondents who are widowed or have never been married have a 584.8% significantly higher odds of not engaging in any sexual activity, a 693.6% significantly higher odds of only engaging in masturbation, and a 391.8% significantly higher odds of engaging in sex that does not include PVI relative to engaging in sex that includes PVI. The magnitudes of the associations also decrease from model one to model two.

Partner health also remains significantly associated with whether or not people are engaging in sexual activity and whether or not it includes PVI after controlling for relationship satisfaction. In comparison to having a partner in excellent health, older adults that have a partner in very good health have a 60.7% significantly lower odds of not engaging in any sex and a 68.5% significantly lower odds of engaging in masturbation only. Older adults that have a partner in good health have a 51.8% significantly lower odds of not engaging in any sex and a 55.8% lower odds of engaging in masturbation only in comparison to having a partner in excellent health. Also in comparison to having a partner in excellent health, older adults in poor

health have a 260.2% significantly higher odds of engaging in any sexual activity that does not include PVI relative to engaging in sex that includes PVI.

Self-rated health and functional status are both still significantly associated with engaging in sexual activity and whether or not it includes PVI. This association remains the same after controlling for relationship quality. In comparison to those with excellent self-rated health, older adults with very good self-rated health have a 106.2% significantly higher odds of not engaging in any sexual activity. In comparison to those with excellent self-rated health, older adults with good self-rated health have a 183.7% significantly greater odds of not engaging in any sexual activity, a 184.8% significantly higher odds of engaging in masturbation only, and a 134.4% significantly higher odds of engaging in sex that does not include PVI relative to sex with PVI. Also in comparison to those with excellent self-rated health, older adults with fair self-rated health have a 188.7% significantly higher odds of not engaging in any sexual activity and a 152.2% significantly higher odds of engaging in masturbation only relative to sex that includes PVI. In comparison to older adults who are in excellent self-rated health, those in poor self-rated health have a 475.8% significantly higher odds of not engaging in any sexual activity relative to sex which includes PVI. Having more difficulty with more activities of daily living is also still significantly associated with a 114.4% significantly higher odds of not engaging in any sexual activity and a 110.6% significantly higher odds of only engaging in masturbation relative to sex with PVI. After controlling for relationship quality, having more difficulty with more activities of daily living becomes significantly associated with engaging in sex that does not include PVI. Older adults who have more difficulty with activities of daily living have a 112.6% significantly higher odds of engaging sex that does not include PVI relative to those who engage in sex which includes PVI.

4.3.3 Model Three: Sexual Satisfaction

In the third model, I also control for sexual satisfaction—satisfaction with frequency and both physical and emotional satisfaction. Preferring more sex is significantly associated with not engaging in sexual activity and only masturbating. Respondents who are not engaging in any sexual activity have a 242.1% significantly higher odds of preferring more sex. Older adults who are only engaging in masturbation also have a 237.6% significantly higher odds of preferring more sex. Respondents who are not engaging in any sexual activity have a 31.5% significantly lower odds of physical satisfaction. Those who are only engaging in masturbation also have a 29.5% significantly lower odds of physical satisfaction.

After controlling for sexual satisfaction, age, gender, race, and education all remain associated with whether or not people are engaging in sexual activity and whether or not it includes PVI. After controlling for sexual satisfaction, in comparison to being a man, older adults who are women have a 288.2% significantly higher odds of not engaging in any sexual activity. This is an increase in magnitude from model two. Older adults with increasing age have a 112.3% significantly higher odds of not engaging in any sexual activity, an 8.8% significantly higher odds of only engaging in masturbation, and a 5.9% significantly higher odds of engaging in sex without PVI relative to engaging in sex that includes PVI. The magnitudes of the associations are similar to model two.

After controlling for satisfaction, the association between educational attainment and whether or not people are engaging in sexual activity and whether or not it includes PVI remain significant with similar magnitudes. In comparison to those with a college degree, having lower educational attainment is associated with a higher odds of not engaging in sexual activity. In comparison to those with a college degree, those with a high school diploma had a 69.5%

significantly higher odds of not engaging in any sexual activity. Those with less than a high school diploma had a 66.6% significantly higher odds of not engaging in any sexual activity. Furthermore, in comparison to those with a college degree, those with some college had a 45.8% significantly lower odds of engaging in sex that does not include PVI. Older adults with a high school diploma had a 49.8% significantly lower odds of engaging in sex that does not include PVI. And older adults with less than a high school diploma had a 62.8% significantly lower odds of engaging in sex that does not include PVI relative to engaging in sexual activity that includes PVI.

Marital status and partner health also remain associated with whether or not people are engaging in sexual activity and whether or not it includes PVI after controlling for sexual satisfaction. In comparison to respondents who are married, those who are divorced or separated had a 311.0% significantly higher odds of not engaging in any sexual activity, and a 365.4% significantly higher odds of only engaging in masturbation relative to sex with PVI. Older adults who are widowed or have never been married had a 943.8% significantly higher odds of not engaging in any sexual activity, a 1124.6% higher odds of only engaging in masturbation, and a 483.7% significantly higher odds of engaging in sex that does not include PVI relative to engaging in sex that includes PVI. The magnitudes of the associations also increase substantially from model two.

After controlling for sexual satisfaction, partner health remains significantly associated with whether or not people are engaging in sexual activity and whether or not it includes PVI. However, for very good, and good health, the magnitudes decrease substantially, the association with fair health becomes significant, and the association with poor health and sex without PVI disappears. In comparison to having a partner in excellent health, older adults who had a partner

in very good health had a 72.5% significantly lower odds of not engaging in any sex and a 75.2% significantly lower odds of engaging in masturbation only. Older adults that have a partner in good health had a 64.8% significantly lower odds of not engaging in any sex and a 69.3% significantly lower odds of engaging in masturbation only in comparison to having a partner in excellent health. Older adults that had a partner in fair health had a 58.7% significantly lower odds of not engaging in any sex and a 47.6% significantly lower odds of engaging in masturbation only in comparison to having a partner in excellent health.

Self-rated health and functional status are both still significantly associated with engaging in sexual activity and whether or not it includes PVI. Having very good self-rated health was still significantly associated with a higher odds of not engaging in any sexual activity but the association with only masturbating became significant with those who have very good self-rated health having a 75.2% lower odds of only masturbating. Having good self-rated health was still significantly associated with no sex. Those who rated their health as good had a 177.0% significantly higher odds of not engaging in any sex. The relationship to masturbation only changed direction. Those who rated themselves as being in good health had a 69.3% significantly lower odds of only masturbating and a 122.5% significantly higher odds of having sex which does not include PVI. Those who rated their health as fair had a 129.0% significantly higher odds of not engaging in any sex. As with good self-rated health, the relationship to masturbation only changed direction. Those who rated themselves as being in fair health had a 47.6% significantly lower odds of only masturbating. Although the relationship between poor self-rated health and not engaging in any sex remained significant, it decreased slightly in magnitude with those in poor health having a 312.2% higher odds of not engaging in any sex. Those with poor self-rated health had a 23.9% significantly lower odds of engaging in masturbation only. Finally, after

controlling for relationship satisfaction, older adults with more difficulty with more activities of daily living had a 13.9% significantly higher odds of not engaging in any sexual activity, a 22.2% significantly higher odds of only masturbating, and a 14.0% significantly higher odds of having sex that did not include PVI relative to sex with PVI.

4.3.4 Model Four: Interest in Sex

In the fourth model, I additionally control for interest in sex. Thinking about sex more often and believing sex is important are both significantly associated with not engaging in sexual activity and only masturbating. Older adults who think about sex more often had a 50.8% significantly lower odds of being in the no sex category and a 24.8% significantly lower odds of being in the masturbation only category. Further, those rating sex as important had a lower 45.2% significantly lower odds of being in the no sex category and a 29.5% lower odds of being in the masturbation only category.

After controlling for interest in sex (Model four), age, gender, and education are all still associated with whether or not people are engaging in sexual activity and whether or not it includes PVI. However, the association between being Black and only masturbating disappears. In comparison to men, women had a 90.2% higher odds of not engaging in any sexual activity but the magnitude decreases substantially. Those who were older had an 11.0 significantly higher odds of not engaging in any sexual activity, a 7.8% significantly higher odds of only engaging in masturbation, and a 5.5% significantly higher odds of engaging in sex without PVI relative to engaging in sex that includes PVI.

After controlling for interest in sex, the association between educational attainment and whether or not people are engaging in sexual activity that includes PVI remain significant with similar magnitudes but the association with not engaging in sex among those with a high school

diploma or less disappears. Having a high school diploma is no longer associated with a higher odds of not engaging in sexual activity, but it is still associated with a 55.5% significantly lower odds of engaging in sexual activity without PVI relative to engaging in sexual activity which includes PVI. Having a less than a high school diploma is no longer associated with a higher odds of not engaging in sexual activity, but it is still associated with a 67.9% significant lower odds of engaging in sexual activity without PVI relative to engaging in sexual activity which includes PVI. In comparison to those with a college degree, those with some college had a 47.0% significantly lower odds of engaging in sex that does not include PVI relative having sex that includes PVI.

Marital status remains significantly associated with whether or not people are engaging in sexual activity, and whether or not it includes PVI after controlling for sexual interest. In comparison to those that are married, respondents who are divorced or separated had a 404.3% significantly higher odds of not engaging in any sexual activity, and a 526.0% significantly higher odds of only engaging in masturbation relative to sex with PVI. Although the direction of the association remains the same, the magnitude of the association increases. Those who are widowed or have never been married had a 1079.4% significantly higher odds of not engaging in any sexual activity, a 1299.2% significantly higher odds of only engaging in masturbation, and a 594.1% significantly higher odds of engaging in sex that does not include PVI, relative to engaging in sex that includes PVI.

After controlling for interest in sex, partner health remains associated with whether or not people are engaging in sexual activity and whether or not it includes PVI. The magnitudes remain similar. In comparison to having a partner in excellent health, older adults that had a partner in very good health had a 70.2% significantly lower odds of not engaging in any sex and

a 78.8% significantly lower odds of engaging in masturbation only. Older adults that had a partner in good health had a 64.6% significantly lower odds of not engaging in any sex and a 72.3% significantly lower odds of engaging in masturbation only in comparison to having a partner in excellent health. Older adults that had a partner in fair health had a 52.3% significantly lower odds of not engaging in any sex and a 48.1% significantly lower odds of engaging in masturbation only in comparison to having a partner in excellent health.

Self-rated health and functional status are both still associated with engaging in sexual activity and whether or not it includes PVI. Having very good self-rated health was significantly associated with a 148.1% higher odds of not engaging in any sexual activity. However, the association with only masturbating with those who have very good self-rated disappears. Older adults with good self-rated health had a 178.1% significantly higher odds of no sex. The relationship between good self-rated health and masturbation only changes direction. Those with good self-rated health had a 153.3% significantly higher odds of engaging only in masturbation. The relationship between good self-rated health and sex without PVI loses significance. Those who rate their health as fair had a 132.3% significantly higher odds of not engaging in any sex. The relationship to masturbation disappeared. The relationship between poor self-rated health and not engaging in any sex remained significant but increased in magnitude. Those with poor self-rated health had a 375.5% significantly higher odds of not engaging in sex. After controlling for interest in sex, having more difficulty with more activities of daily living was still significantly associated with a 16.1% higher odds of not engaging in any sexual activity, a 13.5% significantly higher odds of only masturbating (1.135), and a 14.5% significantly higher odds of having sex that did not include PVI relative to sex with PVI.

Finally, after controlling for interest in sex, satisfaction with frequency, physical satisfaction, and emotional satisfaction with sex remained significant. Those who would prefer more sex had a 338.5% significantly higher odds of not engaging in sexual activity and a 301.1% significantly higher odds of only masturbating. The relationship between preferring less sex and no sex became significant with those who prefer less sex having a 49.1% significantly lower odds of not engaging in any sex. Respondents reporting higher physical satisfaction had a 20.8% significantly lower odds of being in the no sex category. Further those reporting higher physical satisfaction had a 25.0% significantly lower odds of being in the masturbation only category and a 36.3% significantly lower odds of being in the sex without PVI category.

4.4 Summary

This chapter explores the social factors associated with patterns of sex. Model one begins with most common predictors that are known from the extant literature to be associated with maintaining sex at older ages. Similar to the findings from the descriptive analyses above, this analysis confirms the interpretation that women have less access to sex. Women have a greater odds of not engaging in sex at all, controlling for race and ethnicity, education, marital status, partner health, functional status, and self-rated health. Relationship quality did not account for any of this association. After controlling for satisfaction with sex and satisfaction with frequency in model four, the association between sex without PVI and gender disappears. This suggests that sex with PVI may not be substantially different in terms of sexual satisfaction with sex without PVI for women. Furthermore, after controlling for interest in sex, the magnitude of the association between no sex and being a woman decreases substantially. This suggests that although access to partners is still part of the story, agency in choosing not to have sex may also be an important factor for women.

Across all models, older respondents are more likely to not engage in sex than younger respondents. And the magnitudes remain relatively stable. This is true for all types of sex—with PVI, without PVI, and masturbation. This is controlling for self-rated health, marital status, education, race and ethnicity, partner health, and functional status. Although there are older adults of every age group that participate in sexual activity. Sexual activity does decline for some with age alone. This is not explained by desire or satisfaction.

One important difference between the descriptive statistics and the multinomial regression is important for race. In the bivariate analysis there is an association between not engaging in any sex and being black. After controlling for age, gender, education, marital status, health, functional status, and health of a partner, only the association with masturbation remains. However, after controlling for interest in sex, the association with masturbation disappears.

Controlling for age, gender, race and ethnicity, marital status, partner health, functional status, and self-rated health, education is associated with a higher odds of not engaging in any sex and a lower odds of engaging in sex without PVI. The magnitude increases after controlling for satisfaction with frequency and sexual satisfaction but disappears for no sex after controlling for interest. In the final model, those with lower levels of education have a lower odds of engaging in sex without PVI relative to sex with PVI. The magnitude of the association between education and engaging in sex without PVI remains stable through model four. This suggests that class is a strong predictor for the types of sex people engage in and is not impacted by interest in sex.

Marital status is the strongest predictor of the type of sex that older adults are engaging in for both genders. After controlling for age, gender, race and ethnicity, education, functional

status, health, partner health, satisfaction, and interest, unmarried older adults have a higher odds of not engaging in any sex, masturbation only, and sex engaging in sex without PVI.

The first hypotheses, that there will be demographic differences in the sexual behaviors of older adults, was supported. Men, Whites, younger, and more highly educated older adults have a higher odds of engaging in sex that includes PVI, and in some cases sex that does not include PVI. The second hypothesis, that demographic variables, functional status, health and health of one's partner, relationship status, relationship quality, interest in sex, and satisfaction with frequency of sex will be associated with differences in engaging in sexual behaviors was partially supported. Although there is a much smaller magnitude, there is still a gender disparity in terms of no sex. In the following chapter, I will focus on how these relationships impact self-rated health.

5 PATTERNS OF SEX AND SELF-RATED HEALTH

The previous chapter illustrated that older adults engage in a wide variety of sex acts in addition to PVI. For older adults, social position is related to sexual activity. Men, Whites, younger, and more highly educated older adults have a higher odds of engaging in sex that includes PVI, and, in some cases, engaging in sex that does not include PVI. The next step is to explore the relationship between sex and health. In order to determine whether older adults who are more likely to engage in PVI are in better health because of social position and/or the predominant types of sexual activity in which they engage, I test the relationship between self-rated health and patterns of sex. I hypothesize that the benefit of sexual behavior on self-rated health will vary depending on the predominant type of sexual activity in which older adults engage and that this relationship will disappear when controlling for demographic, financial, relationship variables.

As in the previous chapter, the full sample (N=3,005) partnered and unpartnered older adults was used. In order to test the relationship between self-rated health and patterns of sex, I conduct an ordered logic regression. The dependent variable is self-rated health and the independent variables are patterns of sex, as identified in chapter three. First I present the bivariate analyses of the variables used in this analysis, and then the results of the ordered logistic regression.

5.1 Bivariate Relationships

Table seven shows the bivariate relationships between self-rated health, and individual and relationship factors. The bivariate relationships between self-rated health, social factors and patterns of sexual behaviors were discussed in the previous chapter.

Table 7. Bivariate Relationships: Chi Square and One-Way ANOVAs

	Self-rated health				
	Excellent	Very Good	Good	Fair	Poor
Gender (%)					
Female	11.3**	28.6**	32.1**	20.3**	7.7**
Male	12.8**	33.1**	28.3**	18.6**	7.2**
Mean Age	68.03***	68.34***	69.84***	70.25***	70.42***
Race/ethnicity (%)					
White Non-Hispanic	13.6***	35.1***	28.6***	16.2***	6.5***
Black	7.1***	20.2***	35.6***	26.3***	10.7***
Hispanic	9.9***	17.8***	31.4***	32.0***	8.9***
Other Race	11.4***	34.3***	30.0***	15.7***	8.6***
Education (%)					
Bachelors or more	19.1***	41.3***	26.4***	11.1***	2.1***
Some college	12.3***	34.3***	31.9***	16.1***	5.4***
HS or EQUIV	11.3***	28.7***	32.7***	19.5***	7.7***
Less than HS	5.9***	18.8***	29.2***	31.3***	14.8***
Marital status (%)					
Married/cohabitating	12.7***	34.8***	29.3***	17.0***	6.2***
Divorced/separated	12.5***	25.5***	30.1***	21.4***	10.6***
Widowed/never married	10.1***	23.5***	32.8***	24.4***	9.2***

***. Correlation is significant at the 0.001 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Demographic factors were significantly associated with increased self-rated health. As determined by chi square test, Men made up the largest percentages of those in categories of higher self-rated health with more men being in excellent health (12.8% vs. 11.1%) or very good health (33.1% vs. 28.6%) than women.

There were significant mean differences in age among the different categories of self-rated health. Older adults with the highest mean age were in the poor health category (mean=70.42), those in the fair health category slightly younger (mean=70.25) than those in the good health (mean=69.84), very good health (mean=68.34), or excellent categories (mean=68.03). The F value for the one-way ANOVA examining age differences among self-rated health was significant [$F (4, 2988) = 10.2624$, $p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between poor self-rated health and very good and excellent self-rated health was significant ($p < .01$). The mean difference between fair self-rated health and very good and excellent self-rated health was significant ($p < .001$). The mean difference between good health self-rated health and very good and excellent self-rated health was also significant ($p < .01$).

According to the chi square test, there were significant differences between race and self-rated health. Whites made up the highest percentage of people in the excellent health category (13.6%), followed by other races (11.4%), Hispanic people (9.9%), and Black people (7.1%). Other races made up the highest percentage of people in the very good health category (35.1%), followed by Whites (35.1%), Black people (20.2%), and Hispanic people (17.8%). Black older adults made up the highest percentage of those in the good health category (35.6%), followed by Hispanic older adults (31.4%), those of other races (30.0%), and Whites (28.6%). Hispanic older adults made up the highest percentage of people in the fair health category (32.0%), followed by

Blacks (26.3%), Whites (16, 2%), and older adults of other races (15.7%). Black older adults made up the largest percentage of those in poor health category (10.7%), followed by Hispanic older adults (8.9%), those of other races (8.6%), and Whites (6.5%).

There were significant differences between educational attainment and levels of self-rated health. More people with college degrees are in the excellent health category (19.1%) in comparison to those with some college (12.3%), a high school degree (11.3%), and those with less than a high school degree (5.9%). More people with college degrees are also in the very good health category (41.3%) in comparison to those with some college (34.3%), a high school degree (28.7%), and those with less than a high school degree (18.8%). Fewer people with college degrees or more are also in the good category (26.4%) in comparison to those with some college (31.9%), a high school degree (32.7%), and those with less than a high school degree (29.2%). Those with a college degree or more made up the lowest percentage of those in the fair health category (11.1%), followed by those with some college (16.2%), a high school degree (19.5%), and less than a high school degree (31.3%). Finally, those with less than a high school degree made up the highest percentage of the poor health category (14.8%), followed by those with a high school degree (7.7%), some college (5.4%), and older adults with a college degree or higher (2.1%).

As determined by chi square test, there were significant differences between marital status and self-rated health. Those who were married or cohabitating (12.7%) made up a higher percentage of those in excellent health in comparison to those who were divorced or separated (12.5%) and widowed or never married (10.1%). Those who were married or cohabitating (34.8%) also made up a higher percentage of those in very good health in comparison to those who are divorced or separated (25.5%) and widowed or never married (23.5%). Those who are

widowed or never married made up the highest percentage of those in the good health category (32.8%), in comparison to those who are divorced or separated (30.1%) and married or cohabiting (29.3%). Those who are widowed or never married also made up the highest percentage of those in the fair health category (24.4%), in comparison to those who are divorced or separated (21.4%) and married or cohabiting (17.0%). Finally, those who are divorced or separated made up the highest percentage of those in the poor health category (10.6%), in comparison to those who are widowed or never married (9.2%) and married or cohabiting (6.2%).

The bivariate relationships described in this chapter as well as the previous chapter, illustrate an association between both sexual activity and health and sexual activity and being a member of a more privileged group. Thus, we do not know if sex, in particular sex which includes PVI, confers a health benefit, or if those who are in more privileged positions are healthier and have more access to sex. The following analysis examines the impact of demographic, socioeconomic, and sexual activity variables on older adults' self-rated health.

5.2 Ordinal Logistic Regression

5.2.1 Model One: Sexual Behavior and Health

In the ordinal logistic regression model, I estimate the relative impact of different clusters of sexual behavior, with PVI as the reference category, on self-rated health. As in the previous analysis, the fifteen mutually exclusive patterns illustrated in table four were collapsed into four broad patterns according to the Bayesian Information criterion for model selection. These four broad categories remain sex with PVI, sex without PVI, masturbation only, and no sex.

According to model one (see table eight), which does not include control variables, older adults not engaging in any sexual activity had a 62.8% significantly lower odds of reporting

Table 8. Ordinal Logistic Regression for Self-Rated Health

	Model 1	Model 2
Intercept 1	-3.112***	-4.132***
Intercept 2	-1.574***	-2.525***
Intercept 3	-.212***	-1.082**
Intercept 4	1.576***	.780*
No sex	-.989***	-.890***
	(.800)	(.099)
	.372	.411
Masturbation only	-.696***	-.737***
	(.130)	(.139)
	.499	.478
Sex without PVI	-.434*	-.548**
	(.199)	(.202)
	.648	.578
Gender		
Female		.154
		(.080)
		1.167
Age		-.005
		(.005)
		.995
Race/ethnicity		
Black		-.599***
		(.108)
		.549
Hispanic		-.528***
		(.132)
		.590
Other race		-.346
		(.240)
		.707
Education		
Some college		-.444***
		(.104)
		.641
HS or EQUIV		-.659***
		(.108)
		0.517
Less than HS		-1.136***
		(.123)
		.321
Marital Status		
Divorced/separated		.024
		(.120)
		1.024
Widowed/never married		.121
		(.101)
		1.128
Pseudo r-square	.062	.133

N=2433

*p ≤ .05, ** p ≤ .01, *** p ≤ .01

Note: Parameter estimates are listed first in each cell; Standard deviations are listed second; Odds ratios are listed third.

better self-rated health in comparison to those who engage in sex that includes PVI. Further, older adults engaging only in masturbation had a 50.1% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those who engage in sex that includes PVI. Finally, those that engage in sex that does not include PVI had a 35.2% significantly lower odds as those who engage in sex with PVI to experience a one point increase in self-rated health.

5.2.2 Model Two: Demographics

In the ordinal regression model, I estimate the relative impact of different clusters of sexual behavior controlling for demographic variables. After controlling for gender, age, race, ethnicity, education, and marital status, older adults not engaging in any sexual activity had a 58.9% lower odds of experiencing a one point increase in self-rated health in comparison to those who engage in sex that includes PVI. The magnitude for masturbation only did not change substantially. Older adults engaging only in masturbation had a 52.2% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those who engage in sex that includes PVI. And older adults who engage in sex that does not include PVI had a 42.2% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those who engage in sex that includes PVI.

Race and education were both associated with self-rated health for older adults. In comparison to Whites, Black respondents had a 45.1% significantly lower odds of experiencing a one point increase in self-rated health. Hispanic respondents had a 41.0% significantly lower odds of experiencing a one point increase in self-rated health. In comparison to those with a college degree, respondents with some college had a 35.9% significantly lower odds of experiencing a one point increase in self-rated health. Further, those with a high school diploma had a 48.3% significantly lower odds of experiencing a one point increase in self-rated health in

comparison to those with a college degree. And respondents who have completed less than a high school diploma had a 67.9% significantly lower odds of experiencing a one point increase in self-rated health.

5.3 Summary

In the second research question, I hypothesized that patterns of sex will be predictive of self-rated health. This hypothesis was supported. In model one, all patterns of sex were significantly associated with self-rated health. There was variability in how much each type of sexual behavior was associated with self-rated health. In comparison to those who engaged in sex that included PVI, those who did not engage in any sex experienced a 62.8% significantly lower odds of a one point increase in self-rated health. Those who engaged only in masturbation had a 51.1% significantly lower odds of a one point increase in self-rated health than sex that included PVI, and those who engaged in sex that did not include PVI had a 35.2% significantly lower odds of a one point increase in self-rated health than sex that included PVI.

I further hypothesized that the above relationship will be diminished when controlling for demographics, socioeconomic status, and marital status. Hypothesis two was not supported. In model two, after the addition of these controls, sexual patterns remain significant. The odds of a one-point increase in self-rated health for masturbation only and no sex increase slightly in magnitude, but sex which does not include PVI decreases slightly in magnitude in comparison to those that engage in sex that does include PVI. Although some demographic variables, including socioeconomic status and marital status, are associated with self-rated health, these factors do not explain the association between self-rated health and patterns of sexual behavior.

6 PATTERNS OF SEX, SOCIAL AND RELATIONSHIP FACTORS, AND SELF-RATED HEALTH

Chapter four illustrated that social position is associated with patterns of sexual behavior. Men, Whites, younger, and more highly educated older adults are more likely to engage in sex that includes PVI, and in some cases sex that does not include PVI. However, although social position is associated with both health and patterns of sexual behavior, chapter four showed race, socioeconomic status, and marital status do not substantially explain any of the relationship between self-rated health and patterns of sex. Other factors such as relationship dynamics and the meanings attached to sex--importance and interest--may also influence the relationship between sex and health. For example, there may be a different relationship between sex and health for someone who places a high importance on sex but does not have access, and someone who is not interested in sex. Older women who spend time caregiving or who do not want to be in a relationship may be less interested in sex and it may not benefit them to maintain sexual activity. Finally, some of the association between sex and health may in fact be due to gender differences in social support.

In this chapter, I test the relationship between self-rated health, patterns of sex, and these social relationships by extending the previous ordinal logistic regression discussed in chapter two. As in the previous chapter, the full sample (N=3,005) partnered and unpartnered older adults was used. The dependent variable is self-rated health and the independent variables are patterns of sex with the addition of control variables, relationship characteristics, interest in sex, satisfaction with frequency, caregiving, social support, and loneliness. First I will present the bivariate correlations of the variables used in this analysis, and then I will present the results of the ordered logistic regression.

6.1 Bivariate Relationships

The bivariate correlations in this chapter expand upon the bivariate correlations in chapter five with the addition of sexual interest and satisfaction, relationship factors, social support, caregiving, and loneliness. See Table nine.

The relationships between self-rated health and demographics were discussed in chapter five. Relationship factors, including partner health and relationship quality, are significantly associated with self-rated health. As determined by chi square test, there were mean differences between partner health and levels of respondents' self-rated health. Those who had partners in excellent health made up the largest percentage of those in the excellent self-rated health category (29.5%), followed by partners in very good health (13.3%), good health (9.3%), fair health (8.5%), and poor health (10.0%). Those who had partners in very good health made up the largest percentage of those in the very good self-rated health category (45.9%), followed by partners in excellent health (38.8%), good health (31.8%), fair health (24.2%), and poor health (21.9%). Having a partner in good health was more evenly distributed with those who had partners in good health making up the highest percentage (36.9%), followed by partners in fair health (29.6%), very good health (28.3%), poor health (25.6%), and excellent health (17.8%). Those who had partners in fair health (29.3%) made up the largest percentage of the fair self-rated health category in comparison to poor health (22.5%), good health (16.6%), very good health (10.2%), and excellent health (10.0%). Finally, older adults who had partners in poor health made up the largest percentage of those in the poor self-rated health category (20.0%), followed by partners in fair health (8.5%), good health (5.4%), excellent health (3.9%), and very good health (2.3%).

Table 9. Bivariate Relationships: Chi Square and One-Way ANOVAs

	Self-rated health				
	Excellent	Very Good	Good	Fair	Poor
Gender (%)					
Female	11.3**	28.6**	32.1**	20.3**	7.7**
Male	12.8**	33.1**	28.3**	18.6**	7.2**
Mean Age	68.03***	68.34***	69.84***	70.25***	70.42***
Race/ethnicity (%)					
White Non-Hispanic	13.6***	35.1***	28.6***	16.2***	6.5***
Black	7.1***	20.2***	35.6***	26.3***	10.7***
Hispanic	9.9***	17.8***	31.4***	32.0***	8.9***
Other Race	11.4***	34.3***	30.0***	15.7***	8.6***
Education (%)					
Bachelors or more	19.1***	41.3***	26.4***	11.1***	2.1***
Some College	12.3***	34.3***	31.9***	16.1***	5.4***
HS or EQUIV	11.3***	28.7***	32.7***	19.5***	7.7***
Less than HS	5.9***	18.8***	29.2***	31.3***	14.8***
Marital status (%)					
Married/cohabitating	12.7***	34.8***	29.3***	17.0***	6.2***
Divorced/separated	12.5***	25.5***	30.1***	21.4***	10.6***
Widowed/never married	10.1***	23.5***	32.8***	24.4***	9.2***
Partner Health (%)					
Excellent	29.5***	38.8***	17.8***	10.0***	3.9***
Very good	13.3***	45.9***	28.3***	10.2***	2.3***
Good	9.3***	31.8***	36.9***	16.6***	5.4***
Fair	8.5***	24.2***	29.6***	29.3***	8.5***
Poor	10.0***	21.9***	25.6***	22.5***	20.0***
Mean functional ability	.244***	.408***	.808***	2.32***	4.87***
Mean relationship satisfaction	6.12***	6.06***	5.90***	5.78***	5.74***
Satisfaction with frequency (%)					
Would prefer more sex	10.5***	27.6***	30.4***	21.7***	9.8***
Satisfied with frequency	14.2***	34.5***	29.8***	16.1***	5.4***
Would prefer less sex	8.1***	21.7***	29.4***	21.7***	8.1***
Mean sexual satisfaction					
Emotional satisfaction	3.15***	2.98***	2.83***	2.77***	2.62***
Physical satisfaction	3.14***	3.02***	2.82***	2.82***	2.52***
Mean interest in sex					
Think about sex	2.54***	2.39***	2.08***	1.91***	1.73***
Importance of sex	2.99***	2.88***	2.57***	2.47***	2.31***
Mean social support	14.43***	14.17***	13.66***	13.30***	13.28***
Mean loneliness	3.67***	3.80***	3.99***	4.47***	4.65***
Mean hours/day spent caregiving	.343	.389	.408	.307	.298

***. Correlation is significant at the 0.001 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

There were significant mean differences in functional ability among self-rated health. Older adults with the least amount of functional disabilities (mean=.244) were in the excellent self-rated health category, in comparison to those in very good self-rated health (mean=.408), good self-rated health (mean=.808), fair self-rated health (mean=2.32), and poor self-rated health (mean=4.87). The F value for the one-way ANOVA examining the differences in functional ability among the categories of self-rated health was significant [$F (4, 2857) = 255.217$, $p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between poor, fair, and good self-rated health and all other categories of self-rated health were significant ($p < .01$). The mean difference between very good self-rated health and poor, fair, and good self-rated health were also significant ($p < .01$).

There were significant mean differences in relationship satisfaction among the categories of self-rated health. Older adults with excellent self-rated health had a higher relationship satisfaction (mean=6.12), followed by very good self-rated health (mean=6.05), good self-rated health (mean=.5.90), fair self-rated health (mean=5.78), and poor self-rated health (mean=5.74). The F value for the one-way ANOVA examining the differences in functional ability among the categories of self-rated health was significant [$F (4, 2857) = 5.065$, $p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between poor and excellent self-rated health were significant ($p < .05$). The mean difference between fair self-rated health and very good and excellent self-rated health were also significant ($p < .01$).

As determined by chi square test, there were significant differences between satisfaction with frequency of sex and older adults' levels of self-rated health. The highest percentage of older adults in the excellent self-rated health category were satisfied with frequency of sex (14.2%), in comparison to being unsatisfied with too little sex (10.5%) and unsatisfied with too

much sex (8.1%). The highest percentage of older adults in the very good self-rated health category made were also satisfied with frequency of sex (35.5%), in comparison to being unsatisfied with too little sex (27.6%) and unsatisfied with too much sex (21.7%). The highest percentage of those in good self-rated health were unsatisfied with too little sex (30.4%), in comparison to being satisfied with frequency of sex (29.8%) and unsatisfied with too much sex (29.4%). The highest percentage of those in fair self-rated health were unsatisfied with too little sex (21.7%) and being unsatisfied with too much sex (21.7%), in comparison to being satisfied with frequency of sex (16.1%). Finally, those in poor self-rated health made up the highest percentage of those in the unsatisfied with too little sex category (9.8%), in comparison to being unsatisfied with too much sex (8.1%) and satisfied with frequency of sex (5.4%).

There were significant mean differences in physical and emotional satisfaction among the categories of self-rated health. Older adults with the highest emotional satisfaction with sex (mean=3.15) were in excellent self-rated health, followed by very good self-rated health (mean=2.98), good self-rated health (mean=2.83), fair self-rated health (mean=2.77) and poor self-rated health (mean=2.62).). The F value for the one-way ANOVA examining the differences in emotional satisfaction among the categories of self-rated health was significant [$F(4, 1877) = 9.417$, $p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between poor self-rated health, and very good and excellent self-rated health were significant ($p < .01$). The mean difference between fair self-rated health, and very good and excellent self-rated health were significant ($p < .05$). The mean difference between good self-rated health and excellent self-rated health were also significant ($p < .001$).

Older adults with the highest physical satisfaction with sex (mean=3.14) were in excellent self-rated health, followed by very good self-rated health (mean=3.02), good self-rated

health (mean=2.82), fair self-rated health (mean=2.82) and poor self-rated health (mean=2.52). The F value for the one-way ANOVA examining the differences in emotional satisfaction among the categories of self-rated health was significant [F (4, 1877) = 12.970, p < .001]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between poor self-rated health, and all other categories of self-rated health were significant (p < .05). The mean difference between fair self-rated health, and very good and excellent self-rated health were significant (p < .05). The mean difference between good self-rated health and very good and excellent self-rated health were also significant (p < .01).

Interest in sex was operationalized as the amount one thinks about sex and how important one rates sex. Older adults who thought about sex most often (mean=2.54) were in excellent self-rated health, followed by very good self-rated health (mean=2.39), good self-rated health (mean=2.08), fair self-rated health (mean=1.91) and poor self-rated health (mean=1.73). The F value for the one-way ANOVA examining the differences in emotional satisfaction among the categories of self-rated health was significant [F (4, 1877) = 16.846, p < .001]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between poor self-rated health, and very good and excellent self-rated health were significant (p < .001). The mean difference between fair self-rated health, and very good and excellent self-rated health were significant (p < .001). The mean difference between good self-rated health and very good and excellent self-rated health were also significant (p < .001).

Older adults who had the highest mean of rating sex as more important were in excellent self-rated health (mean=2.99), followed by very good self-rated health (mean=2.88), good self-rated health (mean=2.57), fair self-rated health (mean=2.47) and poor self-rated health (mean=2.31). The F value for the one-way ANOVA examining the differences in emotional

satisfaction among the categories of self-rated health was significant [F (4, 1877) = 14.846, p < .001]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between poor self-rated health, and very good and excellent self-rated health were significant (p < .001). The mean difference between fair self-rated health, and very good and excellent self-rated health were significant (p < .001). The mean difference between good self-rated health and very good and excellent self-rated health were also significant (p < .001).

Older adults who had the highest levels of perceived social support (mean=14.3) were in excellent self-rated health, followed by very good self-rated health (mean=14.7), good self-rated health (mean=13.66), fair self-rated health (mean=13.30) and poor self-rated health (mean=13.28). The F value for the one-way ANOVA examining the differences in emotional satisfaction among the categories of self-rated health was significant [F (4, 1877) = 11.639, p < .001]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between poor self-rated health, and very good and excellent self-rated health were significant (p < .01). The mean difference between fair self-rated health, and very good and excellent self-rated health were significant (p < .001). The mean difference between good self-rated health and very good and excellent self-rated health were also significant (p < .01).

Older adults with the highest levels of loneliness were in poor self-rated health (mean=4.67), followed by fair self-rated health (mean=4.47), good self-rated health (mean=3.99), very good self-rated health (mean=3.80) and excellent self-rated health (mean=3.67). The F value for the one-way ANOVA examining the differences in emotional satisfaction among the categories of self-rated health was significant [F (4, 1877) = 23,549, p < .001]. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between poor self-rated health, and good, very good and excellent self-rated health were

significant ($p < .001$). The mean difference between fair self-rated health, and good, very good and excellent self-rated health were significant ($p < .001$). The mean difference between good self-rated health and excellent self-rated health were also significant ($p < .05$).

In the previous chapter, I found that sex, whether it includes PVI or not, is associated with a health benefit regardless of social position. The additional analysis presented here tests the role of other relationship factors and meanings of sex on self-rated health. Partner health, relationship satisfaction, sexual satisfaction, satisfaction with frequency, interest in sex, social support, and loneliness were all significantly associated with self-rated health and patterns of sex in the bivariate correlations. Caregiving is significantly associated with patterns of sex. Therefore, I extend the ordinal logistic regression to examine how relationship status, relationship quality, social support, sexual interest and satisfaction, and caregiving mediate and moderate the relationship between sexual activity and health. Finally, I hypothesize that older adults who have low levels of desire and interest and choose not to have maintain sexual activity will have higher self-rated health than those who have low levels of desire and interest and maintain sexual activity.

As in the previous analysis, the fifteen mutually exclusive patterns illustrated in Table four were collapsed into four broad patterns according to the Bayesian Information criterion for model selection. These four broad categories remain sex with PVI, sex without PVI, masturbation only, and no sex.

6.2 Ordinal Logistic Regression

6.2.1 Model Three: Partner & Relationship Factors

In model three, in addition to controlling for demographic variables, I control for

Table 10. Ordinal Logistic Regression for Self-rated Health

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept 1	-3.112***	-4.132***	-4.066***	-3.799***	-4.433***	-4.452***
Intercept 2	-1.574***	-2.525***	-2.475***	-2.181***	-2.840***	-2.857***
Intercept 3	-.212***	-1.082**	-1.006*	-.650	-1.249	-1.266
Intercept 4	1.576***	.780*	.903*	1.308**	.813	.796
No sex	-.989***	-.890***	-.841***	-.593***	-.452**	-.453**
	(.800)	(.099)	(.102)	(.128)	(.146)	(.146)
	.372	.411	.431	.553	.637	.636
Masturbation only	-.696***	-.737***	-.642***	-.452**	-.418*	-.410*
	(.130)	(.139)	(.144)	(.160)	(.186)	(.186)
	.499	.478	.526	.636	.658	.693
Sex without PVI	-.434*	-.548**	-.420*	-.331	-.355	-.361
	(.199)	(.202)	(.205)	(.214)	(.237)	(.237)
	.648	.578	.657	.718	.701	.697
Gender						
Female		.154	.145	.214*	.080	.076
		(.080)	(.082)	(.096)	(.114)	(.114)
		1.167	1.156	1.239	1.083	1.079
Age		-.002	-.002	-.003	-.004	-.004
		(.005)	(.005)	(.006)	(.007)	(.007)
		.995	.998	.997	.996	.996
Race						
Black		-.599***	-.562***	-.532***	-.638***	-.630***
		(.108)	(.111)	(.123)	(.152)	(.152)
		.549	.570	0.587	.529	.533
Hispanic		-.528***	-.478***	-.487**	-.420*	-.410*
		(.132)	(.135)	(.147)	(.180)	(.180)
		.590	.620	.615	.657	.664
Other race		-.346	-.291	-.277	-.281	-.273
		(.240)	(.245)	(.260)	(.286)	(.286)
		.707	.748	.758	.755	.761
Education						
Some college		-.444***	-.372***	-.383**	-.414**	-.413**
		(.104)	(.106)	(.113)	(.126)	(.126)
		.641	.689	.682	.661	.662
HS or EQUIV		-.659***	-.609***	-.572***	-.630***	-.632***
		(.108)	(.110)	(.119)	(.134)	(.134)
		.517	.544	.564	.532	.532
Less than HS		-1.136***	-1.053***	-1.070***	-1.130***	-1.129***
		(.123)	(.126)	(.138)	(.169)	(.169)
		.321	.349	.343	.323	.323
Marital Status						
Divorced/separated		.024	-.284	-.395*	-.332	-.346
		(.120)	(.147)	(.161)	(.192)	(.192)
		1.024	.752	.674	.718	.708
Widowed/never married		.121	-.233	-.283	-.180	-.209
		(.101)	(.135)	(.151)	(.180)	(.182)
		1.128	0.792	.754	.318	.811

Table 10. Continued-Ordinal Regression for self-rated Health

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Partner health						
Very good			-.114	-.089	-.371**	-.376*
			(.131)	(.143)	(.161)	(.161)
			.892	.915	.690	.687
Good			-.545***	-.502***	-.746***	-.749***
			(.132)	(.143)	(.164)	(.164)
			.580	.605	.474	.473
Fair			-.763***	-.664**	-.900***	-.905***
			(.145)	(.159)	(.182)	(.183)
			.466	.515	.407	.404
Poor			-.860***	-.664***	-1.254***	-1.260***
			(.189)	(.207)	(.246)	(.246)
			.423	.515	.285	.284
Relationship quality			.033	-.042	-.040	-.038
			(.026)	(.036)	(.045)	(.045)
			1.034	0.958	.961	.963
Satisfaction with Frequency						
Would prefer more sex				-.351***	-.343**	-.502*
				(.096)	(.110)	(.225)
				.704	.710	.606
Would prefer less sex				-.087	-.122	-.038
				(.154)	(.182)	(.299)
				.916	.885	.963
Sexual Satisfaction						
Physically pleasurable				.182**	.137*	.139*
				(.058)	(.068)	(.068)
				1.200	1.147	1.115
Emotionally satisfying				.018	-.057	-.057
				(.061)	(.073)	(.073)
				1.018	.945	.944
Interest in sex						
How often thinks about sex				.070	.122*	.108
				(.044)	(.052)	(.154)
				1.072	1.113	1.114
How important is sex				.030	.040	.044
				(.044)	(.052)	(.051)
				1.030	1.041	1.045
Hours spent caregiving					.143**	.142**
					(.048)	(.048)
					1.115	1.153
Social support					.051*	.050*
					(.024)	(.024)
					1.052	1.052
Loneliness					-.204***	-.202***
					(.038)	(.038)
					.815	.817

Table 10. Continued-Ordinal Regression for self-rated Health

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Interest X unsatisfied (too little sex)						-.064
						(.081)
						.429
Interest X unsatisfied (too much sex)						.055
						(.139)
						1.057
Pseudo r-square	.062	.133	.150	.161	.196	.196

N=2433

$^{*}p \leq .05$, $^{**}p \leq .01$, $^{***}p \leq .01$

Note: Parameter estimates are listed first in each cell; Standard deviations are listed second; Odds ratios are listed third. References are: Sex with PVI, Male, White, College degree or more, Married or cohabiting, Partner health excellent, Satisfaction with frequency

relationship factors such as partner health and relationship quality. After controlling for gender, age, race, ethnicity, education, marital status, partner health, and relationship quality, those not engaging in any sexual activity had a 56.6% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those who engage in sex that includes PVI. Masturbation only changed little in magnitude with those engaging only in masturbation having a 47.4% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those who engage in sex that includes PVI. And those that engage in sex that does not include PVI have a 34.3% significantly lower odds than those who engage in sex with PVI, to experience a one point increase in self-rated health.

Race, ethnicity, and education were both still associated with self-rated health and did not change substantially in magnitude with the addition of partner health and relationship quality. In comparison to Whites, Black respondents had a 43.19% significantly lower odds of experiencing a one point increase in self-rated health. Hispanic respondents had a 37.7% significantly lower odds of experiencing a one point increase in self-rated health. In comparison to those with a college degree, respondents with some college had a 31.2% significantly lower odds of experiencing a one point increase in self-rated health. Those with a high school diploma had a 45.6% significantly lower odds of experiencing a one point increase in self-rated health in

comparison to those with a college degree. And respondents who have completed less than a high school diploma had a 65.1% significantly lower odds of experiencing a one point increase in self-rated health.

The relationship variable partner health was significantly associated with self-rated health. In comparison to older adults who had partners in excellent health, those who had partners in good health had a 42.0% significantly lower odds of experiencing a one point increase in self-rated health. Those who had partners in fair health had a 53.4 % significantly lower odds of experiencing a one point increase in self-rated health. And those who had partners in poor health had a 57.7 % significantly lower odds of experiencing a one point increase in self-rated health. Relationship quality was not significantly related to self-rated health.

6.2.2 Model Four: Satisfaction and Interest

Model four adds the component of sexual satisfaction and interest to the model of self-rated health. In model four, sex that does not include PVI is no longer significant. After controlling for gender, age, race, education, marital status, partner health, relationship quality, satisfaction with sex, interest in sex, and satisfaction with frequency, those not engaging in any sexual activity had a 44.1% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those who engage in sex that includes PVI. Those engaging only in masturbation had a 35.6% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those who engage in sex that includes PVI. In comparison to earlier models, the impact of sex with includes PVI on self-rated health is not significantly different from sex that does not include PVI. Furthermore, the magnitude of the association between masturbation only and a one-point increase in self-rated health increases.

After controlling for demographics, marital status, partner health, and relationship quality, satisfaction with sex, interest in sex, and satisfaction with frequency, gender becomes significant. Those who are female have a 23.9% significantly higher odds of experiencing a one point increase in self-rated health in comparison to men.

After the addition of controls in model four, race, ethnicity, and education both remain associated with self-rated health and did not change substantially in magnitude. In comparison to Whites, Black respondents had a 41.3% significantly lower odds of experiencing a one point increase in self-rated health. Hispanic respondents had a 38.6% significantly lower odds of experiencing a one point increase in self-rated health. In comparison to those with a college degree, respondents with some college had a 32.0% significantly lower odds of experiencing a one point increase in self-rated health. Those with a high school diploma had a 43.6% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those with a college degree. And respondents who have completed less than a high school diploma had a 65.7% significantly lower odds of experiencing a one point increase in self-rated health.

After controlling for demographic factors, marital status, partner health, and relationship quality, satisfaction with sex, interest in sex, and satisfaction with frequency, marital status becomes significant. Those who are divorced or separated had a 30.1% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those who are married.

After controlling for demographics, marital status, and relationship quality, satisfaction with sex, interest in sex, and satisfaction with frequency, partner health remained associated with self-rated health. In comparison to older adults who had partners in excellent health, those who had partners in good health had a 39.5% significantly lower odds of experiencing a one point

increase in self-rated health. Older adults who had partners in fair health had a 48.5% significantly lower odds of experiencing a one point increase in self-rated health. And older adults who had partners in fair health also had a 48.5% significantly lower odds of experiencing a one point increase in self-rated health.

Both satisfaction with frequency and sexual satisfaction were significantly associated with self-rated health. Older adults who were dissatisfied with too little sex had a 29.9% significantly lower odds of experiencing a one point increase in self-rated health. Those who rate their sex as more physically pleasurable had a 20.0% significantly higher odds of experiencing a one point increase in self-rated health.

6.2.3 Model five: Social Support, Loneliness, and Caregiving

Model five adds the variables caregiving, social support, and loneliness to the model. With the addition of these social factors, both not engaging in any sexual activity and engaging only in masturbation remain significantly associated with self-rated health. After controlling for demographic factors, relationship factors, sexual interest and satisfaction, and social factors, older adults not engaging in any sexual activity had a 36.3% significantly lower odds of a one point increase in self-rated health in comparison to those who engage in sex that includes PVI. Those engaging only in masturbation had a 34.2% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those who engage in sex that includes PVI.

After the addition of controls in model five, the association between gender and self-rated health that became significant in model four, again loses significance. Furthermore, the association between marital status and self-rated health that became significant in model four, also loses significance.

Similar to model three and four, race, ethnicity, and education both remain significantly associated with self-rated health. In comparison to Whites, Black respondents had a 47.1% significantly lower odds of experiencing a one point increase in self-rated health. Hispanic respondents had a 38.5% significantly lower odds of experiencing a one point increase in self-rated health. In comparison to those with a college degree, respondents with some college had a 33.9% significantly lower odds of experiencing a one point increase in self-rated health. Those with a high school diploma had a 46.8% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those with a college degree. And respondents who have completed less than a high school diploma had a 67.7% significantly lower odds of experiencing a one point increase in self-rated health.

After controlling for demographics, demographic factors, relationship factors, sexual interest and satisfaction, and social factors, partner health remained significantly associated with self-rated health. In comparison to those who had partners in excellent health, those who had partners in very good health had a 31.0% significantly lower odds of experiencing a one point increase in self-rated health. Those who had partners in good health had a 52.6% significantly lower odds of experiencing a one point increase in self-rated health. Those who had partners in fair health had a 59.3% significantly lower odds of experiencing a one point increase in self-rated health. And finally, older adults who had partners in poor health had a 71.5% significantly lower odds of experiencing a one point increase in self-rated health.

After the addition of controls in model five, both satisfaction with frequency and sexual satisfaction remained significantly associated with self-rated health. Those who were dissatisfied with too little sex had a 29.0% significantly lower odds of experiencing a one point increase in

self-rated health. Those who rate their sex as more physically pleasurable had a 14.7% significantly higher odds of experiencing a one point increase in self-rated health.

Interest in sex was not significant in model four, but became significant after the addition of caregiving, social support, and loneliness. Those who thought about sex more often had an 11.3% significantly higher odds of experiencing a one point increase in self-rated health. Model five included the addition of social factors such as caregiving, loneliness, and social support. All three were significantly associated with self-rated health. Older adults who spent increasing hours per day caregiving had an 11.5% significantly higher odds of experiencing an increase in self-rated health. Older adults who had higher appraisals of social support had a 5.2% significantly higher odds of experiencing a one point increase in self-rated health. Those with increased levels of loneliness had an 18.5% significantly lower odds of experiencing a one-point increase in self-rated health.

6.2.4 Model Six: Frequency & Interest

Model six added of the interaction between frequency and interest to the model of self-rated health. Two interactions were tested—the interaction between too infrequent sex and interest (measured only by how often one thinks of sex) and the interaction between too frequent sex and interest. Neither interaction was significant. In this final model, not engaging in any sexual activity and engaging only in masturbation remain significantly associated with self-rated health with very little change in magnitude. After controlling for gender, age, race, education, marital status, partner health, and relationship quality, satisfaction with sex, and the interaction between frequency and interest, those not engaging in any sexual activity had a 36.4% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those who engage in sex that includes PVI. Those engaging only in masturbation had a 59.3%

as likely to experience a one point increase in self-rated health in comparison to those who engage in sex that includes PVI.

In model five, race and education also remain significantly associated with self-rated health with little change in magnitude. In comparison to Whites, Black respondents had a 46.7% significantly lower odds of experiencing a one point increase in self-rated health. Hispanic respondents had a 33.6% significantly lower odds of experiencing a one point increase in self-rated health. In comparison to those with a college degree, respondents with some college had a 33.8% significantly lower odds of experiencing a one point increase in self-rated health. Those with a high school diploma had a 46.8% significantly lower odds of experiencing a one point increase in self-rated health in comparison to those with a college degree. And respondents who have completed less than a high school diploma had a 67.7% significantly lower odds of experiencing a one point increase in self-rated health.

After controlling the interaction between interest and satisfaction with frequency, partner health remained significantly associated with self-rated health with almost no change in magnitude. In comparison to those who had partners in excellent health, those who had partners in very good health had a 25.1% significantly lower odds of experiencing a one point increase in self-rated health. Older adults who had partners in good health had a 52.7% significantly lower odds of experiencing a one point increase in self-rated health. Those who had partners in fair health had a 59.6% significantly lower odds of experiencing a one point increase in self-rated health. And older adults who had partners in poor health had a 71.6% significantly lower odds of experiencing a one point increase in self-rated health.

Social factors such as caregiving, loneliness, and social support remained significantly associated with self-rated health in model six, also with little change in magnitude. All three

were associated with self-rated health. Older adults who spent more hours per day caregiving had a 5.2% significantly higher odds of a one point increase in self-rated health. Those with increasing appraisals of social support had a 4.8% likelihood on a one point increase in self-rated health. Those with increased levels of loneliness had an 18.3% significantly lower odds of experiencing a one-point increase in self-rated health.

In addition to the previous analysis, post-hoc interactions between gender and each social and relationship factors were tested. None were significant.

6.3 Summary

In the third research question, I hypothesized that relationship quality, social support, interest in sex, satisfaction with amount of sex, and caregiving would impact the strength or significance of the relationship between patterns of sex and self-rated health. This hypothesis was partially supported, after controlling for demographic variables, relationship factors accounted for some of the variation in self-rated health in all three models. Relationship quality was not significantly associated with self-rated health, but after controlling for partner health and relationship quality, the odds of a one-point increase in self-rated health for masturbation only, no sex, and sex that does not include PVI, increase slightly in magnitude in comparison to those that engage in sex that does include PVI.

In model three, both gender and marital status become significant but then lose significance again in model four. Women have a greater odds of increased self-rated health than men after controlling for satisfaction with frequency of sex and sexual satisfaction. This disappears after controlling for social support and loneliness in model four. There is a similar relationship to marital status and self-rated health. Older adults who are divorced or separated have a lower odds of increased self-rated health than older adults who are married. This

relationship also disappears after controlling for social support and loneliness. This suggests that social support and loneliness are account for some of the relationship between gender and marital status and self-rated health.

The addition of sexual interest and satisfaction in model four has the largest impact on the relationship between patterns of sex and self-rated health. After these controls are added to the model, the relationship between sex with PVI and self-rated health loses significance relative to sex that includes PVI. Further, the magnitude of the odds of a one-point increase in self-rated health for masturbation only and no sex increase relative to sex which includes PVI.

In model five, social factors including caregiving, loneliness, and social support are added to the model. These social factors mediate the relationship between patterns of sex and self-rated health to some extent. Older adults who spend more hours involved in caregiving and who have higher levels of social support have a higher odds of increased self-rated health. Those who are lonelier have a lower odds of increased self-rated health. After the addition of these variables in model five, not engaging in any sex and only engaging in masturbation remain significant but of the odds of a one-point increase in self-rated health for masturbation only and no sex increase relative to sex which includes PVI.

Race, partner health, and education remained stable throughout all models. This suggests that they are very important predictors of self-rated health regardless of sexual activity, sexual satisfaction, and social support and loneliness.

Finally, I hypothesized that older adults who have low levels of desire and interest and choose not to have maintain sexual activity will have higher self-rated health than those who have low levels of desire and interest and maintain sexual activity. This was not supported. Higher levels of desire were significantly associated with self-rated health regardless of

frequency. Additionally, controlling for desire did not account for the association between patterns of sexual activity and self-rated health.

In sum, sex seems to be important for self-rated health, but it does not matter whether or not it includes PVI. Older adults who engage in masturbation are only slightly more likely to experience a one-point increase in self-rated health as those who are not having sex. Finally, being satisfied with sex and satisfied with frequency of sex also matters for self-rated health. Older adults who do not feel like they are having enough sex have lower self-rated health. And those who find sex more physically pleasurable are more likely to have higher self-rated health. These effects remained constant when other variables including caregiving, social support, and loneliness were added in model five.

7 DISCUSSION

This research uses a feminist gerontological approach to analyze the relationship between gender, sex, and health. Feminist gerontology is a critical framework that posits that both gender and age are socially constructed, create restrictive roles and stereotypes, and are based on power relationships (Bengtson, Burgess and Parrott 1997, Calasanti and Slevin 2001, Hooyman et al. 2002, Ray 1996). It calls for analyzing these power relationships in order to make visible who is advantaged and disadvantaged by the current knowledge and status quo (Calasanti 2004, Hooyman et al. 2002).

The successful aging model is widely used in gerontology (Dillaway and Byrnes 2009). However, the definitions and criteria for successful aging are vague, often controversial, and differ among researchers, policy analysts, and lay people (Martin et al. 2015). Moreover, the language of successful aging often overreaches the original conceptualization. For example,

although the successful aging model does not discuss sex, trends in the current sex and aging literature emphasize a successful aging framework (Katz and Marshall 2004, Marshall 2012). Some articles explicitly use a successful aging framework (Syme et al. 2012, Wiley and Bortz 1996), while others do not acknowledge any theory but emphasize the correlation between sex and health (Karraker, DeLamater and Schwartz 2011, Karraker and DeLamater 2013). One of the strengths of a successful aging approach is highlighting the modifiable factors to help individuals age with a minimum of disease and disability in contrast to what used to be thought of as normal problems with aging. However, continued engagement in sexual activity may not be a factor people can or want to modify. Second, sexual activity may not directly impact health. Sex may impact health mediated by social support and relationship satisfaction or healthier people may just be having more sex (Karraker and DeLamater 2013). Additionally, scholars have identified several significant limitations in the successful aging framework (Martinson and Berridge 2014). If the criticisms of successful aging are not addressed in designing new research, they become embedded in the research. A feminist gerontological perspective can enhance our understanding of the relationship between sex, aging, and health, by addressing who is advantaged and disadvantaged by the current knowledge. Using a feminist gerontological perspective, this dissertation sought to tease out the complexity in the relationship between sex and health for older adults using data from the NSHAP, wave one.

In the first research question, I ask what types of sexual activity, in addition to penile-vaginal intercourse (PVI), characterize the sexual activity of older adults, how does this vary across social groups. This analysis illuminates the variability in the sexual behavior of older adults and challenges the narrow definitions of sex prevalent in a successful aging framework. In

subsequent chapters, I further examine the relationship between patterns of sex and self-rated health.

In the first research question, I hypothesized that there would be demographic differences in sexual behaviors. This hypotheses was supported. Men, Whites, and those with higher educational attainment were more likely to engage in sex that included PVI. Next I hypothesized that demographic variables, functional status, health and sexual health of one's partner, relationship status, relationship quality, interest in sex, and satisfaction with frequency of sex would account for these differences in engaging in sexual behaviors. This would illustrate which social groups are aging successfully according to current definitions. This hypothesis was partially supported. Differences among race disappeared completely. Differences among marital status and education remained. And although differences among gender remained significant, the magnitude of the association is decreased substantially.

In chapters five and six, I examine the relationship between self-rated health and patterns of sex. Chapter five examined the second research question which hypothesized that the benefit of sexual behavior on self-rated health would vary depending on the predominant type of sexual activity in which older adults engage. This was hypothesis was supported. In comparison to older adults who engaged in sex that included PVI, those who did not had a lower odds of an increase in self-rated health. Further, I hypothesized that the above relationship will disappear when controlling for demographic variables. This was not supported. After the addition of these controls, sexual patterns remain significant and the magnitudes of the association only changes slightly.

The final analysis chapter addressed the third research question regarding the relationship between patterns of sex, self-rated health, relationship factors, satisfaction with sex, and social

support, caregiving, and loneliness. I hypothesized that relationship status, relationship quality, social support, interest in sex, satisfaction with the frequency of sex, health and sexual health of one's partner, and caregiving will account for the variation on the benefit of specific sexual behavior on self-rated health. This hypothesis was partially supported. After controlling for demographic variables, relationship factors accounted for some of the variation in self-rated health in all three models. Finally, I hypothesized older adults who have low levels of desire and interest and choose not to have maintain sexual activity will have higher self-rated health than those who have low levels of desire and interest and maintain sexual activity. This hypothesis was not supported. Below, I discuss some of the major findings, their implications, and what they mean in terms of successful aging and feminist gerontology.

7.1 Definitions of Sex

One important criticism of the current sex and aging literature is that sex is often defined as frequency of PVI or not defined at all. (Burgess 2004, Delamater 2012, Marshall 2012). How researchers define, or do not define sex, matters. Chapter four illustrates that older adults are engaging in a wide variety of sex acts that do not always include PVI. Although the majority of those who are having sex are engaging in PVI (77%), many are including a variety of other behaviors in addition to PVI and intimate contact (40%) and nearly a quarter regularly have sex which does not include PVI (23%). Furthermore, chapter six shows that although sex may be important for health, it does not matter whether or not that sex includes PVI. However, the current literature is implicitly or explicitly focused on PVI (Burgess 2004, Delamater 2012, Marshall 2012). This exclude people who do not regularly engage in PVI, either because preference, same-sex relationships, or functional limitations.

Critical gerontological frameworks, such as feminist gerontology, question these understandings and who benefits from them. Emphasizing the relationship between sexuality and health, and defining sex as PVI promotes the importance of an androcentric definition of sex that emphasizes male pleasure. An androcentric definition of sex is one in which sex is defined by penetration and ends with a male orgasm. Any other behaviors are thought of as foreplay, leading up to the defining act (Maines 1999). Although 50-70% of women do not achieve orgasm in this manner, it is considered normal for women to orgasm via penetrative sex and abnormal for them not to and often considered a sexual dysfunction (Bancroft 2002). Moreover, it is a heteronormative and ableist definition of sex. Many sexual minorities and people with disabilities do not engage in these sexual scripts. Thus, an androcentric model of sex, may have a limited explanatory value for health and well-being of women, people with disabilities, and sexual minorities.

These narrow definitions, or lack of definitions of sex devalue or erase sexual behavior other than PVI. Thus rendering the experiences of those who do not engage in PVI—either because of preference or ability—invisible. Furthermore, the successful aging perspective promotes sexual activity, often narrowly defined, as something essential for good health. At best, this ignores the sexuality of women, people with disabilities, and sexual minorities, at worst it posits male pleasure necessary for health and longevity. The results from chapter six illustrate that although sex is associated with better health, it does not matter if it includes penetration and suggests that successful aging alone may be inadequate to explain the sexual behavior of women, sexual minorities, and people with disabilities. Framing this research from a feminist gerontological approach challenges the current research to explicitly operationalize sex in a more inclusive way.

7.2 Social Context

Successful aging has been critiqued for emphasizing individual modifiable behaviors without paying enough attention to the social context which influence those behaviors (Bengston and DeLiema 2016, Holstein and Minkler 2003). Feminist gerontology is intersectional (Hooyman et al. 2002) and can enhance to a successful aging perspective by bringing in the complexity of social context. In chapter five and six, after all controls, in the ordinal regression predicting self-rated health, demographics did not account for much of the relationship between patterns of sex and self-rated health. M, the impact of race, education, and partner health on self-rated health was not influenced by patterns of sex. Race, education, and partner health remained significant throughout all models with little change in magnitude. Although these factors did not account for any of the relationship between self-rated health and patterns of sex, the fact that they remained stable throughout all models speaks to the importance of these factors for health, regardless of sexual activity and illustrates that sexual activity and its impact on health occurs within a social context. Below, I discuss race, education, and partner health, how each impacted self-rated health, and what that tells us about the relationship between these social context variables and sex.

Partner health was included as a control variable because it is a determinant of access to sex (Burgess 2004, Waite et al. 2009). However, across all models in the ordinal logistic regression in chapters five and six, the magnitude of the association between partner health and self-rated health remains consistent. This suggests that regardless of patterns of sex and gender, not having a partner in good health negatively impacts one's own health. Marriage is posited to be good for health because spouses may encourage positive health behaviors or monitor each other's health (Umberson, Crosnoe and Reczek 2010, Waite 1995). However, this may not occur

if one or both partners is in poorer health. Having a partner in poorer health contributes to having a lower odds of increased self-rated health in a number of ways. First, couples may encourage unhealthy habits as well as healthy habits (Gryzwacz and Marks 1999, Umberson 1984). Having a partner in poorer health may increase caregiving responsibilities (Umberson, Crosnoe and Reczek 2010) or contribute to relationship stress which is negatively associated with health (Umberson and Montez 2011). Social, emotional, and instrumental support is important for health—especially at older ages--and one may get less support from partners who have poorer health (Berkman, Glass, Brissette, and Seeman 2000). Younger married and cohabitating couples tend to be similar in terms of health but this is more likely to become discordant as people age (Monden 2007). Furthermore, dissolution of relationships either from widowhood or divorce can negatively impact health (Williams and Umberson 2004). Findings in chapters five and six illustrate that at older ages, the declining health of one's partner can significantly impact one's own health more than sexual behavior. Having a partner in poor health has been cited in the existing literature as a reason for lack of access (Burgess 2004, DeLamater and Karraker 2009, Waite et al. 2009), however, it may have less the do with access and more to with how a partner's health impacts one's own health, which may in turn impact function and desire.

As with partner health, the association with education and self-rated health was persistent and stable across all models regardless of sexual activity. In comparison to older adults with a college degree, older adults with some college were in poorer health. And in comparison to those with some college, older adults with a high school diploma were on poorer health. Those with less education than a high school diploma were in the poorest health. This was true regardless of whether or not they were having sex or not or if that sex included PVI. Because many older adults are retired, education was used in this study as a proxy for socioeconomic status.

However, both education and income are related to each other, difficult to tease apart, and matter for health (Lynch & Kaplan 2000). Education is not merely one aspect of socioeconomic status but has distinct qualities that are associated with health (Mirowski and Ross 2003). People with lower educational achievement tend to have the worst mental and physical health outcomes as well as the highest mortality rates (Mirowski and Ross 2003). Education may also have symbolic value, especially if it was a prestigious education, conferring a higher social status. It may confer psychological, cognitive, and social resources that benefit health (Ross and Wu 1996). Chapter four of this research illustrates that education is associated with the types of sex people are having, but chapters five and six show that this does not account for any of the relationship between education and health and education does not account for much of the relationship between patterns of sex and health. This shows that even if sex were a modifiable behavior that people could change to improve their health, it happens within a social context with differential impacts on health.

Chapter four demonstrated that race was not a predictor of patterns of sex. However, chapters five and six illustrate that race remains, regardless of sex, a very important predictor of health. In contrast to Carpenter, Nathanson, and Kim (2006), I found few differences in patterns of sex by race among older adults. In model one of chapter four, masturbation only was the only pattern of sexual activity in which Blacks were less likely to engage than whites. This confirms research that shows that Blacks, especially Black women, are more sexually conservative than Whites (Carpenter, Nathanson and Kim 2006, Laumann 1994). However, activity controlling for education, relationship factors, and sexual interest and desire, racial differences in the sexual activity of Blacks and Whites disappeared. These differences in patterns of sex may reflect differences in social context as well as differences in health due to racial health disparities.

Patterns of sex also did not account for any of the relationship between race and health. Although health disparities have been well researched and well documented among older adults, health inequity remains entrenched. Relative to whites, minorities experience earlier onset of disease, greater severity of disease, and poorer survival. And for diseases in which blacks have lower rates, they often have higher severity (Williams 2010). Because minorities are more likely to live in poverty, socioeconomic status accounts for some of the disparity (Williams 1999) but socioeconomic status, education, and behavior have not been able to explain all of the racial health disparities between blacks and whites (Dressler, Oths, and Gravlee 2005; Krieger 2002; Williams 1997). Racial minorities tend to live in segregated communities, with limited access to resources, which can limit economic mobility via access to educational and employment opportunities (Williams and Collins 2001). Additionally, discrimination causes stress, which may in turn causes negative health outcomes (Clark et al. 2002; Dressler et al. 2005). Furthermore, disadvantage caused by discrimination and unequal access to education accumulate over the life course and result in health disparities among older adults (Ferrraro 2007).

Race, education, and partner health are all strong predictors of self-rated health that are not modified by patterns of sex. A successful aging framework which focuses on individual behaviors would suggest that sex would be good for health regardless of social position. Feminist gerontology, which highlights privilege and social position, demonstrates how access to sex is different by social position and has differential impact on health. Furthermore, racial health disparities are persistent for older adults and are not impacted by patterns of sex.

7.3 Gender

A successful aging framework, which positions sex as a modifiable factor with the potential to improve health frames women as disadvantaged. Women are less likely to engage in

any sexual activity (Lindau et al. 2007) and the dominant interpretation of this has been about access (Carpenter, Nathanson and Kim 2006, Karraker, DeLamater and Schwartz 2011). The bivariate correlations in chapter four support this interpretation. Because of the intersection of sexism and ageism, women have limited access to partners as they age. Men tend to date or marry younger, women are more likely to be widowed, and men are more likely to remarry after widowhood or divorce (Carpenter, Nathanson and Kim 2006, Karraker, DeLamater and Schwartz 2011). If sex is necessary for health, the patriarchy has limited women's ability to age in the healthiest way.

But from a feminist gerontological perspective, constructing a stereotype of older women as helpless victims of the patriarchy, may ultimately reinforce an ageist and sexist ideology (Krekula 2007). Furthermore, rather than being disadvantaged by a lack of available partners or an unattainable relationship, older women may actively be choosing to refrain from engaging in sexual activity--and not merely because of physical dysfunction. Research on late life re-partnering shows that many women choose not to date later in life because they value their independence (Davidson 2001). In the multinomial regression in chapter four, after controlling for interest in sex, the magnitude of the association between being a woman and not engaging in any sex decreases substantially. This suggests that although access to partners may still be a significant determinant of sexual activity for women, choice and agency may be just as important as a lack of access to sex. Some women may be choosing not to engage in sexual activity. Although this finding does not deny the significance of access to partners (Carpenter, Nathanson and Kim 2006), it confirms research asserting that many older women chose to remain independent and abstain from relationships (Davidson 2001). Access to partners and personal choice may be equally important in explaining why women have less sex than men at older ages.

This has implications for the application of successful aging to sex. First, if interpretations of successful aging position sex as a modifiable behavior that is important for health, then because of this unequal access, women have less access to successful aging. Second, if women are choosing not to engage in relationships because they are not interested, is it still a modifiable behavior? If so, how important should it be to modify it? And although women are making these choices with a patriarchal system, feminist gerontology allows a more complete understanding of sexual choices and constraints for older women.

7.4 The Relationship between Health and Sex

This research does not resolve whether sex is good for health or health is necessary for sex. However, it does provide insight into the relationship. The results of the ordinal regression in chapter six illustrate that sex is associated with increased self-rated health but it does not matter whether it includes PVI. Furthermore, masturbation only was similar to not engaging in sex at all in terms of self-rated health. This suggests that the benefits to health provided by sex are psychosocial rather biological. In other words, intimacy and social connectedness to a partner may be beneficial for health. This illustrates the importance of defining sex in inclusive ways that incorporate the wide variety of definitions of sex and patterns of sex.

Desire is also important for health. Of the factors that did mediate the relationship between patterns of sex and self-rated health, interest in sex was associated with an increase in self-rated health regardless of patterns of sex. This suggests that it is not the sex, or lack thereof, but interest in sex, whether or not it is acted upon, that is important for health. This provides evidence that desire may be a mechanism through which poor health impacts patterns of sex. Many medications for a myriad of health problems such as antidepressants, anti-hypertensives, anti-inflammatory medications, and Parkinson's drugs can impact both desire as well as sexual

function and are prescribed to a large percentage of older adults (Marshall 2012). Also, chronic pain or health problems themselves may interfere or take precedence over sexual desire (DeLamater and Sill 2005).

Sex matters for health. And sex, or sexual desire, may be an important aspect of successful aging. But the application of successful aging to research on sex and aging is incomplete because it cannot take into account privilege or social context. Using a feminist gerontological perspective, this research challenges the current knowledge and definitions of sexuality for older adults. It shows that androcentric definitions of sex are not necessarily important for health. A feminist gerontological approach is also critical in that it helps outline who benefits from the current knowledge. Men, Whites, and those with more educational attainment benefit if the behaviors they engage in are posited to be what is most healthy. It disadvantages women, sexual minorities, and people with disabilities, if they are only viewed as disadvantaged and lacking agency.

7.5 Successful Aging and Sex

Extant literature has argued that sexual activity should be a component of successful aging (Syme 2012, Wiley and Bortz 1996). My research does not refute a successful aging framework and may in fact provide some evidence that sex is a component of active engagement with life. Chapter six illustrates that after accounting for social and relationship factors, there is still an association between health and sexual activity. Partnered sexual activity, but not masturbation, is associated with health. This provides evidence that relationships, intimacy, and social connection are important for health. However, the fact that masturbation is not associated with increased health provides evidence that it may not be the act of sex per se, but the intimacy and social connection that is provides. Furthermore, chapter six also illustrates that it does not

matter whether or not that sex includes PVI. A feminist gerontological perspective can extend successful aging by expanding definitions of sex. It does not matter what type of partnered sex one is having. All types of partnered sex are associated with health, whether or not they include PVI.

This research also illustrates that we can learn more about social phenomena as well as the theories we use, when we are explicit about our use of theory (Bengtson, Burgess and Parrott 1997). As discussed above, many sex and aging studies reference successful aging in the literature review to frame the argument, but the actual study design is atheoretical. Theory is important for explaining how and why social phenomena occur (Alley, Putney, Rice and Bengston 2010). The directionality of the relationship between sex and health is still elusive and if sex is important for health, little is known about the mechanism for how this works. Using successful aging or the relationship between health and sexual activity in the literature review without testing it, extending it, or explaining how it frames our research, replicates assumptions and biases rather than furthering knowledge. Moreover, the research misses the opportunity to learn more about both successful aging and sex and aging.

7.6 Limitations

NSHAP is an innovative dataset that it is one of the only nationally representative studies purposefully designed to study sexuality in older adults. However, one of its most important strengths—it's broad definition of sex-- may also be a limitation. NSHAP defines sex as "any mutually voluntary activity with another person that involves sexual contact, whether or not intercourse or orgasm occurs." While this is a strength in that it allows participants to define sex themselves and does not limit it to PVI, it is also a limitation in that it may be difficult to discern exactly how participants are defining sex. The survey has skip patterns that begin with a broad

the definition of sex, then ask about frequency, and then for those that say they are engaging in sexual activity, it asks about particular behaviors. If there are people who do not think what they are doing counts as sex after the initial definition and answer 'rarely or never', they will not be asked about the particular behaviors.

Because social support and loneliness were important for health, and because the benefits to health from sex are likely psychosocial, it was surprising that there was no association between relationship quality and self-rated health. Relationship quality is known to be associated with health (Umberson 2006). Marital strain is well known to be a cause of mental and physical health problems (Kiecolt-Glaser and Newton 2001, Umberson and Montez 2011) and this association increases at older ages (Umberson et al. 2006). It was significantly correlated in the bivariate relationships but the association disappeared in the ordinal logistic regression after controlling for demographic variables and partner health. There may be a selection effect in that those with the worst marital quality have divorced or separated by the time they reach older ages. However, it may simply be a limitation in the way that the marital quality was operationalized. The measurement for marital quality in this study may not be as robust as others. NSHAP asks respondents to rate on a scale from one to seven how happy the relationship is and one static point in time. Other measures that include multi-dimensional constructs (Glenn 1990, Umberson 2006) may be necessary.

A feminist gerontological approach emphasizes the intersectional nature of inequality and intersectional research would extend the understanding of the social context of sex and health. The interactions included in the models in chapter six were not significant. This may because none of the interactions were significantly associates, or the sample sizes may have been too small to have enough statistical power. A larger and more diverse sample would improve this.

Another important limitation is that the sample can only be generalized to community dwelling older adults in the United States. It cannot be generalized to all older adults including those who live in institutions such as assisted living facilities or nursing homes. However, even with these limitations, it has the potential to expand our knowledge of the relationship between sex and health over the life course. This study was also cross-sectional. How patterns of sex change over time will be important in further understanding the relationship between health, sex, and adapting to health or age related changes.

7.7 Future Research

Although this research provides insights into the relationship between continued sex and health throughout aging, we still do not know if health is necessary for sex or if sex provides a health benefit. Future research should continue to investigate this with longitudinal data. This would not only help to discover the causal relationship but also help to disentangle some of the conflicting research regarding disability, sex, and health. Research using a multidimensional operationalization of relationship quality would also help disentangle the relationship between sex, health, and relationship factors.

Expanding this research to non-community dwelling older adults is important. Currently older adults are discouraged from engaging in sexual activity in assisted living facilities (Barmon, Burgess, Bender, and Moorhead, 2016) and this may extend to other congregate living environments. Unexpressed or inhibited sexual desires may negatively impact workers in long-term care (Burgess, Barmon, Moorhead, Perkins, and Bender, 2016). And it would be important to understand how it impacts older adults living in these environments.

This research illustrates that women may not only be disadvantaged in terms of access to sex, but may also be actively choosing not to have sex. Furthermore, because there are no

significant differences in masturbation among men and women, this is likely social rather than biological. However we still do not know if women are adjusting their desires due to a lack of access. More research on women's desire at older ages is needed.

In sum, although health is correlated with sex, and successful aging has been important in how it has shifted the attention away from ageist ideas that focused on the problems of aging to focusing on how people can age in the healthiest way, it may not be adequate for understanding sexuality. Successful aging has been applied to a very narrow definition of sex which does not address criticisms of the theory. Feminist gerontology helps is to shift the lens and look at sex and aging in a more nuanced way, bringing in the social context and giving us a more complete understanding of privilege, race, gender, sexuality, and disability.

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